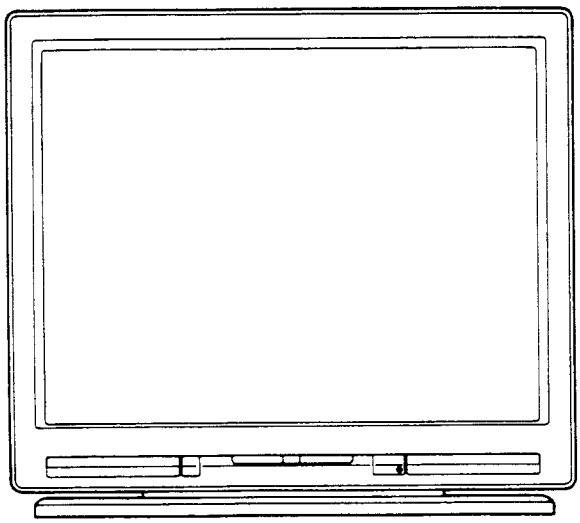
1993

MITSUBISHI

Service Manual

COLOUR TV



MODEL

CT-33B3EDT

MITSUBISHI ELECTRIC CORPORATION

SPECIFICATION

Reception System	CCIR-B/G PAL/SECAM/3.58 NTSC/4.43NTSC
Reception Frequency	VHF 47~89MHz, 104~470MHz UHF 470MHz~862MHz
Mains Input	AC230V 50Hz
Power Consumption	124W
Aerial Input	75Ω
Intermediate Frequency	Video 38.9MHz Sound 33.4/33.16/33.05MHz
Audio Output Speaker	40W (Total) 80×120mm 2pcs 100mm 1pc
Chassis	EURO 11
Picture Tube	A79ECU13X01 110° Deflection
Cabinet Dimensions (Approx.)	750(W) × 670(H) × 550(D) [mm]
Weight (Approx.)	58.5kg

SAFETY PRECAUTIONS

NOTICE : Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING

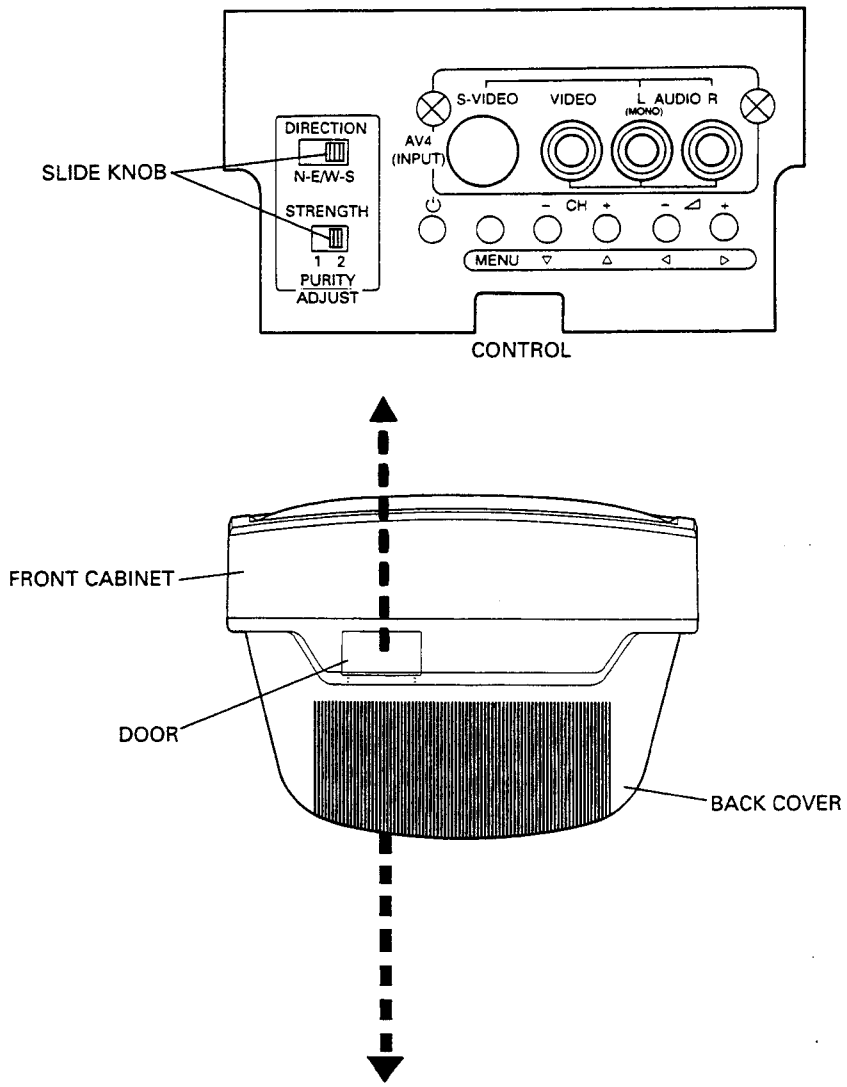
1. An isolation transformer should be used between the television receiver and the AC supply point before any test/service is performed on a LIVE chassis television receiver.
2. Operation of these receivers outside the cabinet or with the cover removed, involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not throughly familiar with precautions necessary when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
4. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

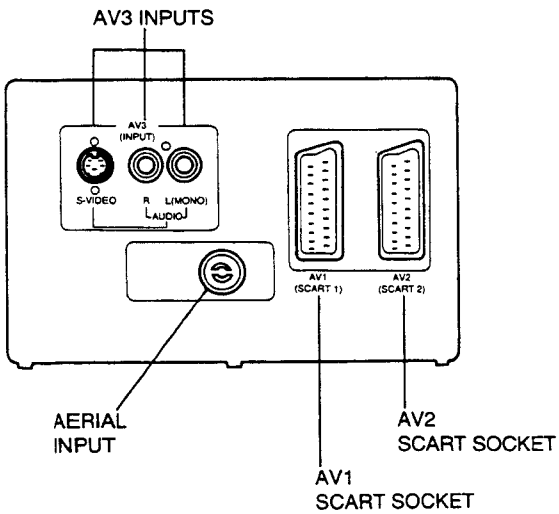
LEAKAGE CURRENT COLD CHECK

Before returning the receiver to the customer, it is recommended that the leakage current be measured according to the following methods.

With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an OHM-METER, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 meg ohm. Any resistance below this value indicates an abnormality which requires corrective action.

CONTROL AND CABINET PARTS





Rear View

SCARTS SOCKET CONNECTORS

MODE / PIN	AV1	AV2
1	AUDIO OUT R	
2	AUDIO IN R	
3	AUDIO OUT L	
4	AUDIO EARTH	
5	BLUE EARTH	EARTH
6	AUDIO IN L	
7	BLUE IN	NOT CONNECTED
8	FUNCTION SWITCH	
9	GREEN EARTH	EARTH
10	NOT CONNECTED	
11	GREEN IN	NOT CONNECTED

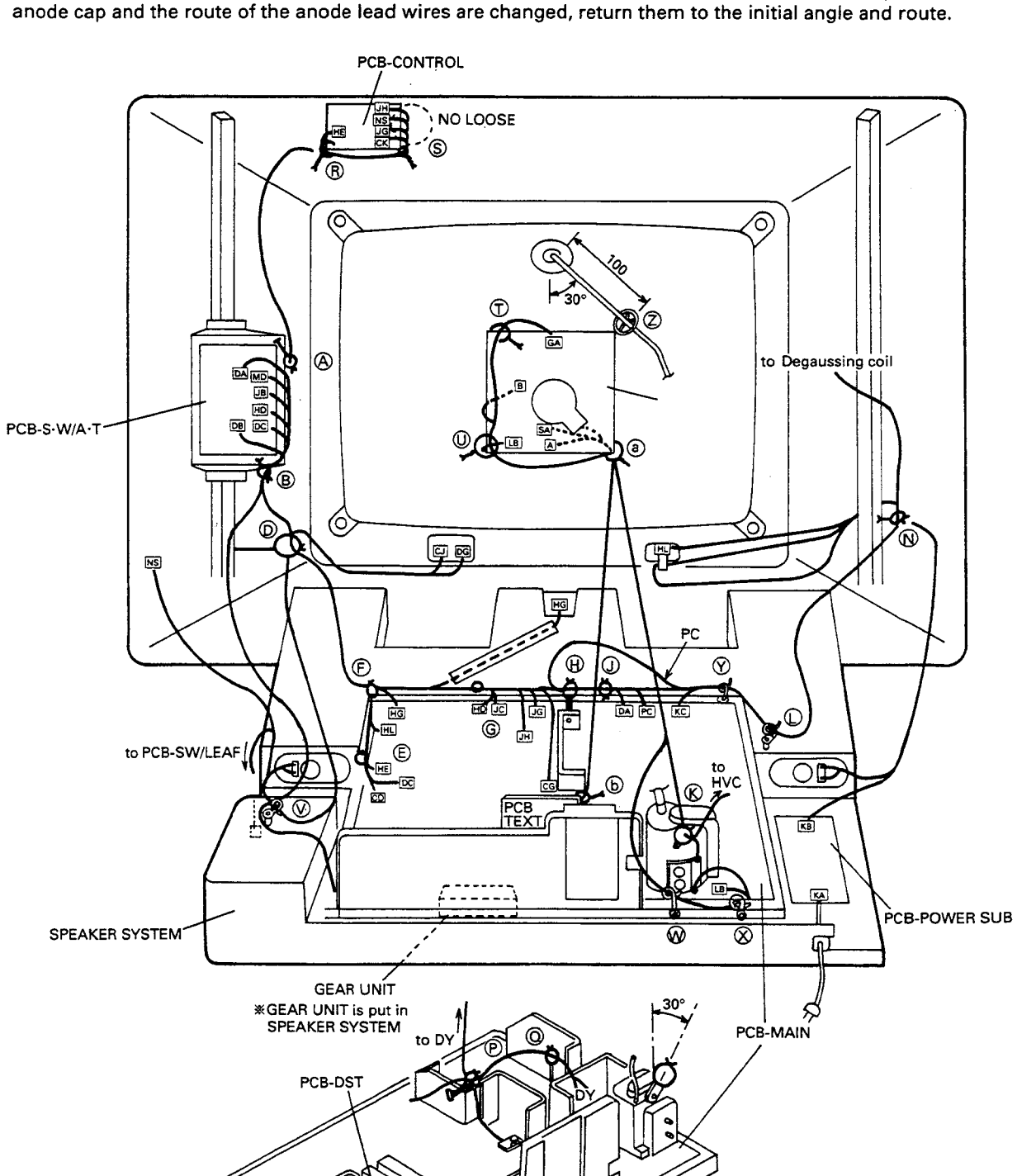
MODE / PIN	AV1	AV2
12	NOT CONNECTED	
13	RED EARTH	EARTH
14	BLANKING EARTH	EARTH
15	RED IN	NOT CONNECTED
16	RGB STATUS (BLANKING)	NOT CONNECTED
17	VIDEO EARTH	
18	VIDEO IN EARTH	
19	VIDEO OUT	
20	VIDEO IN	
21	SOCKET EARTH	

LEAD DRESS

The lead wires to be clamped are listed in the table below.

Note: The inner wires are clamped so that they do not come close to the heat generating or high-tension parts.
After servicing route all wires in their original position.

The anode lead wires are routed so no tensile strength is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.



CONNECTOR LEAD FOR CLAMPER LIST

MARK	LEAD TO BE CLAMPED
A	JG, CK, HE, NS, JH
B	DA, DB, DC, HD, JB, MD, JH, JG, NS, CK, HE
D	JG, CK, HE, HG, JC, CJ, DG, JH
E	HE, CK, CJ, DC
F	HE, DG, HL, JC, DC, HG, JH, JG, CK, CJ
G	DA, DG, HL, JC, JG, JH, HD, CG
H	DA, DG, HL, PC
J	DA, DG, HL, PC
K	EARTH LEAD FROM HVC, FOCUS-LEAD
L	HL, DG, PC, KC
N	HL, KB, KC, PC
P	DY, CG
Q	DY
R	NS, JG, CK, HE, JH
S	NS, JG, JH, CK
T	GA
U	SA, SCREEN-LEAD, GA, LB
V	NS, DB, JB, JC
W	LB, SCREEN-LEAD
X	LB, SCREEN-LEAD
Y	KC, HL, DG, PC
Z	ANODE-LEAD
a	SCREEN-LEAD, FOCUS-LEAD, [A], LB, GA EARTH LEAD FROM HVC, SA
b	GA

CLAMPER LIST FOR CONNECTOR LEAD

CONNECTOR LEAD	LEAD TO BE CLAMPED
ANODE-LEAD	Z
FOCUS-LEAD	K-a(2 LAYER CLAMP)
SCREEN-LEAD	U(2 LAYER CLAMP)-a(2 LAYER CLAMP)-W-X
CG	P-G
CJ	D-F-E
CK	S-R-A-B-D-F-E
DA	B-G-H-J
DB	B-V
DC	B-F-E
DG	D-F-G-H-J-Y-L
DY	Q-P
GA	T-b-a-U-T
HD	B-G
HE	R-A-B-D-F-E
HG	D-F
HL	F-G-H-J-Y-L-N
JB	B-V
JC	V-D-F-G
JG	S-R-A-B-D-F-G
JH	S-R-A-B-D-F-G
KB	N
KC	Y-L-N
LB	X-W-a-U
MD	B
NS	S-R-A-B-V
PC	J-H-Y-L-N
SA	a(2 LAYER CLAMP)-U(2 LAYER CLAMP)
EARTH LEAD FROM HVC	K-a(2 LAYER CLAMP)

Removing the Back Cover

1. Remove five screws securing the Back Cover to the Cabinet Front.
2. Remove four screws securing the Rear Terminal to the Back Cover.
3. On a secure flat surface, carefully lie the TV receiver on the CRT face, use a thick cushion or slab of foam rubber to protect the CRT face from been struck or scratched.
4. Hold the low corners of the Back Cover and release them a little. (Refer to Fig. 1). Moving around the periphery of the Back Cover (Refer to Fig. 2) release and remove it from the Cabinet Front.

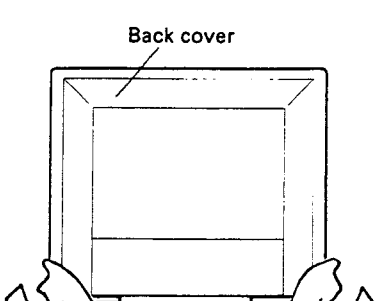


Fig. 1

Attaching the Back Cover

1. On a secure flat surface, carefully lie the TV receiver on the CRT face, use a thick cushion or slab of foam rubber to protect the CRT face from been struck or scratched.
2. Fit the Back Cover so that it is sitting lightly around the periphery of the Cabinet Front. Check that leads are not caught between the Back Cover and the Rear Terminal Panel. Make sure the power cable is correctly positioned and secure in its cable clamp.
3. Push the bottom corners of the Back Cover down ensuring the "tongue" of the Back Cover engages the Cabinet Front correctly. At this point the Back Cover may not go the full way in.
   Fit the "tongue" at the top of the Back Cover to the Cabinet Front top. Now push the Back Cover carefully into place. Confirm that the Back Cover fits perfectly to the Cabinet Front with no space between the top, bottom or any side.
4. Fix the Back Cover with the screws removed during the Back Cover Removal (Refer Removing the Back Cover items 1 and 2).

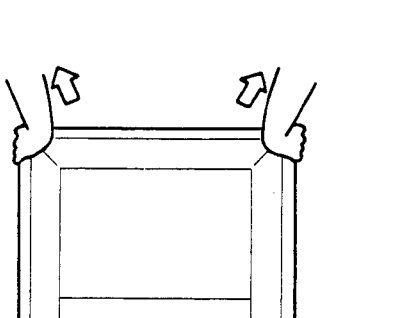


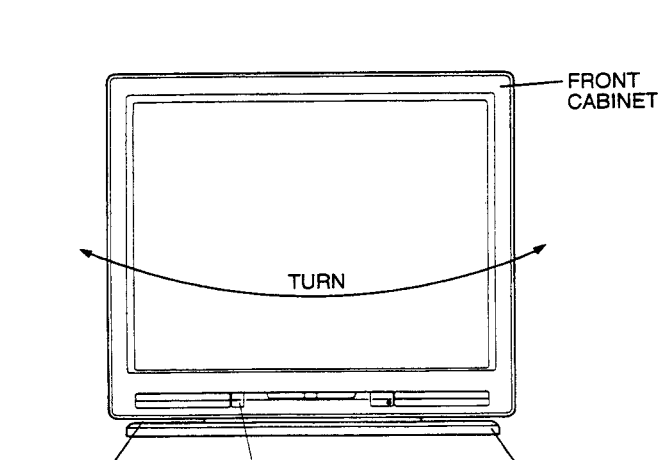
Fig. 2

BEFORE THE ADJUSTMENT

1. Before the adjustment, remove PCB-AV, PCB-TEXT and PCB-DST from PCB-MAIN for easier adjustment by the use of extension jig [Parts No. 859C431O30 and 859C431O50].
2. Remove 2 screws of chassis and pull out of the set for easier adjustment.

NOTE:

1. Remove PCB-AV, them remove PCB-TEXT.
2. In adjusting or moving the set, take care not to get your finger pinched in the FRONT CABINET and the base unit turn.



Electrical Adjustment

Perform only the alignments required. If proper equipment is not available, do not attempt an alignment.

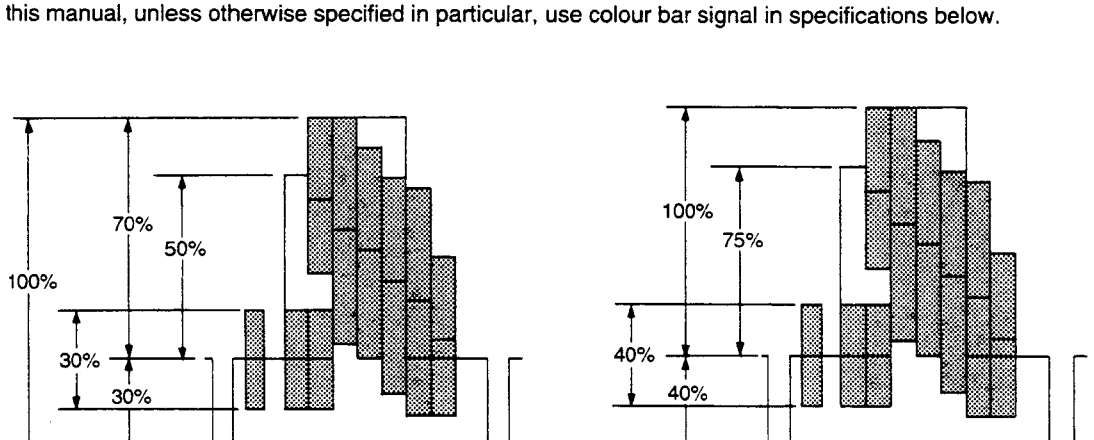
■ Measuring equipment and Jigs

- Oscilloscope (Unless otherwise specified in particular, use 10:1 probes.)
- Signal generator
- Frequency counter
- Direct current voltmeter.
- Electrical tools

■ Test Signal

1) Monoscope signal
   When you have no monoscope signal source for adjustment, connect the unit to a VCR and play an alignment tape (Monoscope).

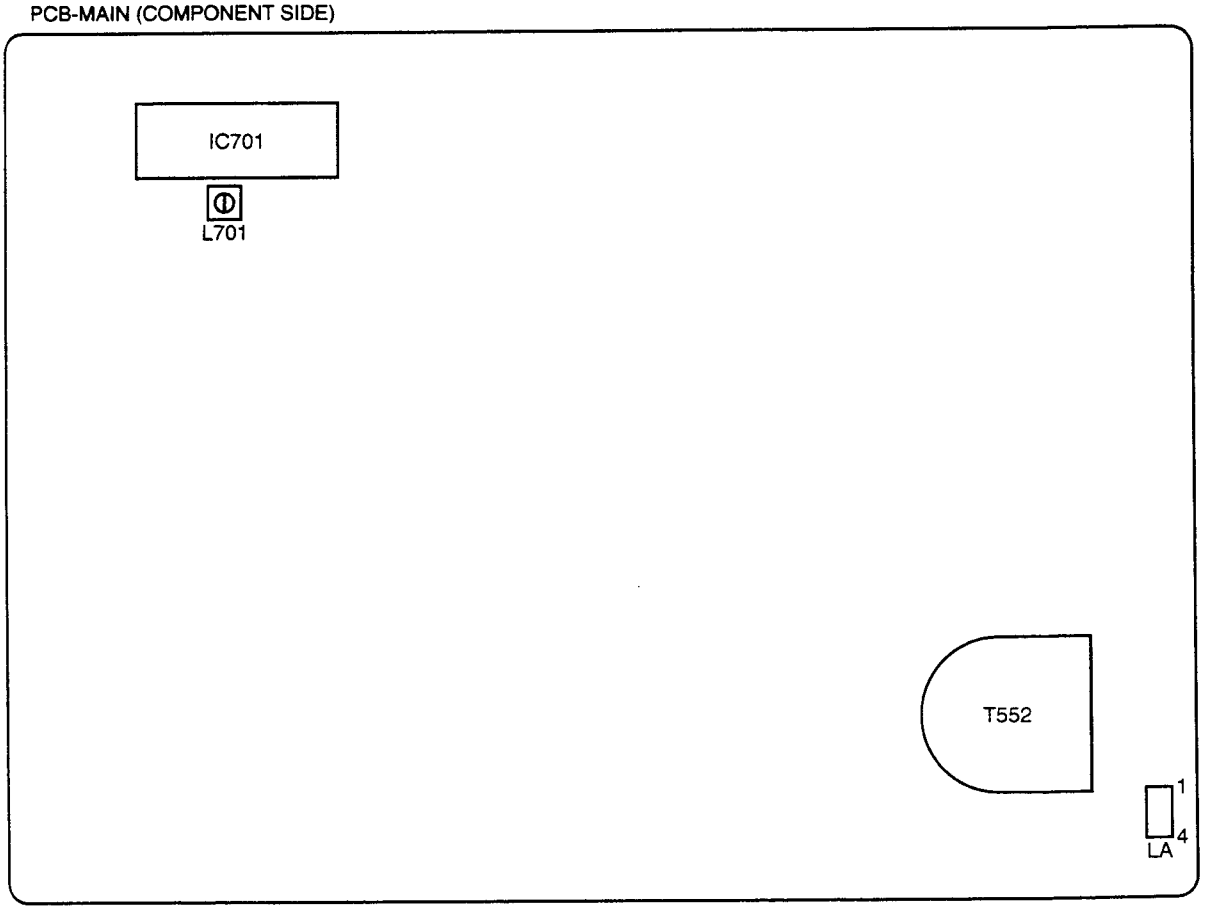
2) Colour bar signal
   In this manual, unless otherwise specified in particular, use colour bar signal in specifications below.



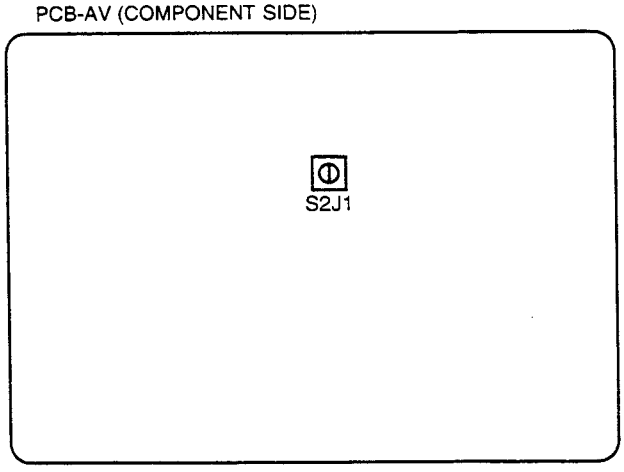
Split-Field color bar (with 100% window)

LOCATION OF TEST & ADJUSTMENT PARTS

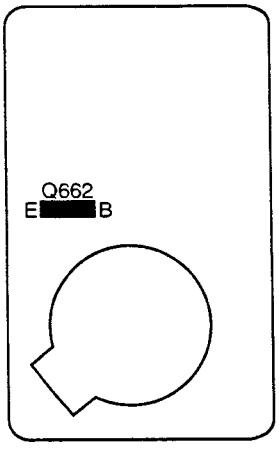
PCB-MAIN (COMPONENT SIDE)



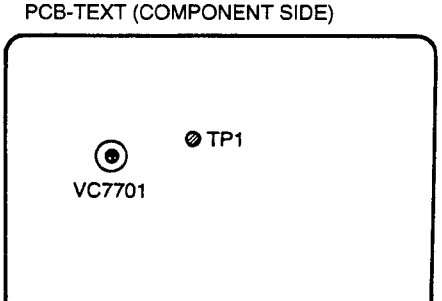
PCB-AV (COMPONENT SIDE)



PCB-CRT (COMPONENT SIDE)

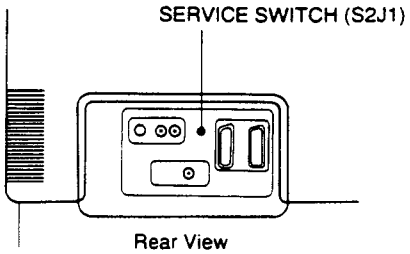


PCB-TEXT (COMPONENT SIDE)

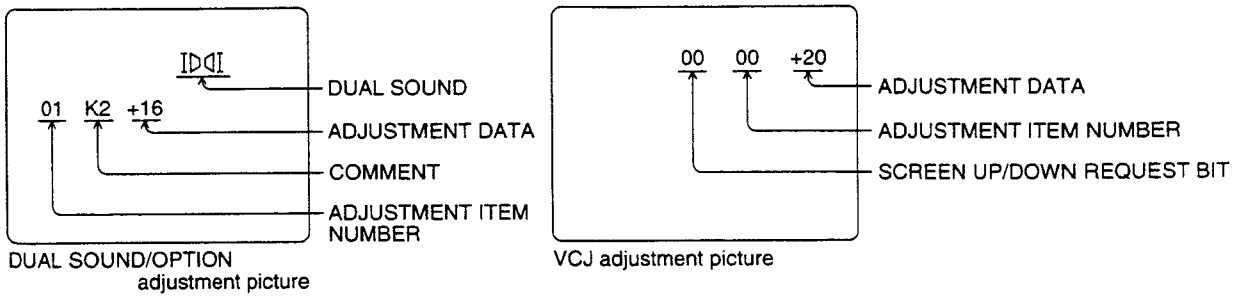


OPERATING THE REMOTE HAND UNIT

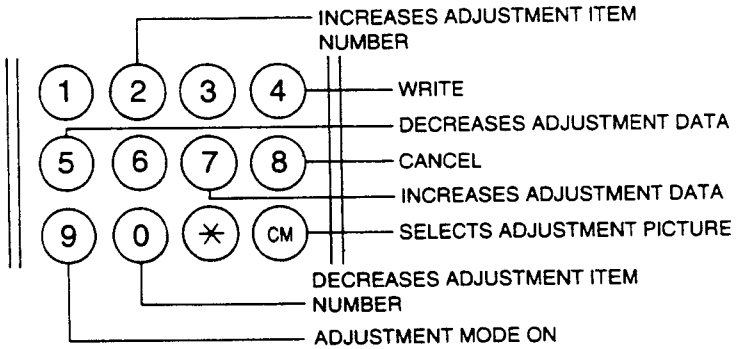
This model is normally adjusted with the remote hand unit and can memorize the adjustment data in the EEPROM.



1. Turn the power on. Press the Service switch (S2J1) and the button "9" within five seconds to set the adjustment mode.
2. Press "CM" button to select the VCJ or the DUAL SOUND/ OPTION adjustment picture.

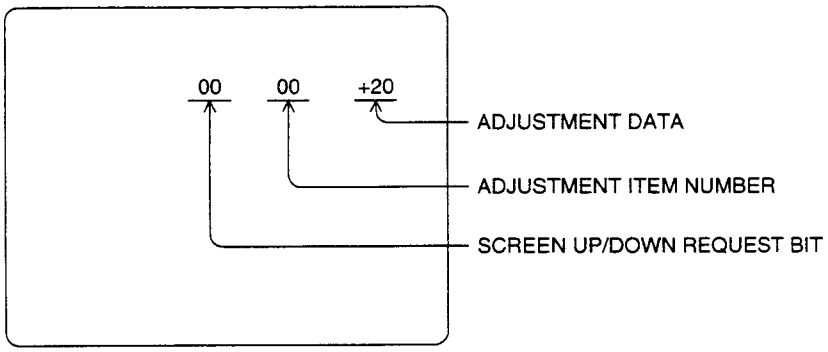


3. Press the button "2" (to increase the adjustment item number) or "0" (to decrease the adjustment item number) to select an adjustment item.
4. Press the button "7" (to increase the adjustment data value) or "5" (to decrease the value).
5. When completing your adjustment, press the button "4" (WRITE) to write the adjustment data in the EEPROM.
   - If cancelling your changed data, for example, because of your mistake, press the button "8" or set power off. The data will be set the former adjustment data before your adjustment.



Before Adjusting

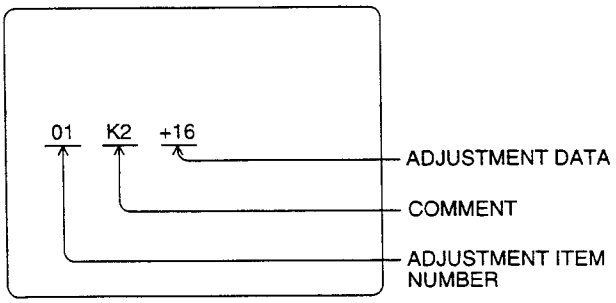
1. Supply an RF signal (programme).
2. Press the button "→ · ←" (OPTIMUM) on the remote hand unit to the factory preset levels for all picture and sound adjustments except volume.
3. Press the Service switch (S2J1) and the button "9" within five seconds to set the adjustment mode.
4. Press "CM" button to select the VCJ adjustment picture.
5. Make sure the Screen Up/Down Request Bit is "00".
   If not so, set it to "00" with the Screen control on the Flyback Transformer.



VCJ adjustment picture

6. Press "CM" button to select the DUAL SOUND/OPTION adjustment picture.
7. Press the button "2" or "0" on the remote hand unit to select the adjustment item numbers.
   Set each value of the adjustment item numbers as shown in table below.
8. Press the button "4" (WRITE) on the remote hand unit to write in the EEPROM.

Item Number	03	04	05	06	07	08	09
CT-33B3EDT	2	1	3	3	2	1	0



DUAL SOUND/OPTION
adjustment picture

- 03 (TUNER PACK)
- 04 (E11/E12)
- 05 (DUAL SOUND)
- 06 (COLOUR)
- 07 (TEXT)
- 08 (AV4)
- 09 (NICAM IC)

[Deflection circuit]
1. Horizontal centre
   Horizontal width

Adjustment purpose Horizontal position and width of picture.

Symptom when incorrectly adjusted Picture too shifted to the left, or the right.
Too compressed or too expanded horizontal width of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

* Before adjusting, set the adjustment item number "01" (V-Breathing correction) to "–32".
1. Supply a video signal (monoscope).
2. Select the VCJ adjustment picture.
3. Set the adjustment item number to "09" (H-PHASE) with the button "2" or "0" on the remote hand unit.
4. Adjust both horizontal marker width equally with the button "5" or "7" on the remote hand unit.
5. Set the adjustment item number to "06" (H-AMP) with the button "2" or "0" on the remote hand unit.
6. Adjust both horizontal width appropriately with the button "5" or "7" on the remote hand unit.

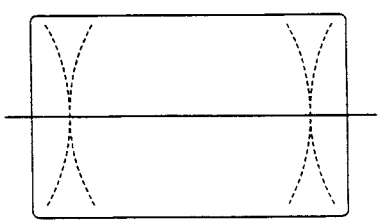
2. East west PCC

Adjustment purpose Horizontal linearity of picture.

Symptom when incorrectly adjusted Horizontal distortion of picture.

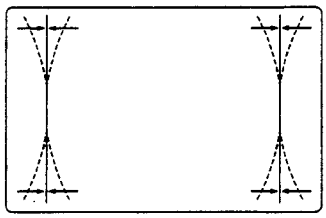
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Crosshatch)
Input terminal	VIDEO IN terminal

* Before adjusting, set the adjustment item number "01" (V-Breathing correction) to "–32".
1. Supply a video signal (crosshatch).
2. Select the VCJ adjustment picture.
3. Set the adjustment item number to "05" (CORNER CORRECTION) with the button "2" or "0" on the remote hand unit.
4. Set the adjustment data value to "–28" with the button "7" or "5" on the remote hand unit.
5. Set the adjustment item number to "03" (PARABOLA TILT) with the button "2" or "0" on the remote hand unit.
6. Observing the second line from both ends on the screen.
   Make the upper and lower distortions symmetrical with the button "7" or "5" on the remote hand unit.



To be continued to the next page.

7. Set the adjustment item number to "02" (PARABOLA-AMP) with the button "2" or "0" on the remote hand unit.
8. Make both vertical lines straight with the button "7" or "5" on the remote hand unit.
   Repeat step 1 to 7 above, if necessary.



9. Supply a video signal (monoscope).
10. Make sure the horizontal width and horizontal centre.
    If shifted, adjust Item 1 (PAL Horizontal Centre and PAL Horizontal Width) and this adjustment again.

3. Vertical height Vertical linearity	**Adjustment purpose** Vertical height and linearity of picture. **Symptom when incorrectly adjusted** Too compressed or too expanded vertical height of picture. Vertical linearity of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (monoscope).
2. Select the VCJ adjustment picture.
3. Press "OPTIMUM" button on the remote hand unit.
4. Set the adjustment item number to "00" (V-AMP) with the button "2" or "0" on the remote hand unit.
5. Set the central circle of monoscope signal to true circle with the button "7" or "5" on the remote hand unit.
6. Set the adjustment item number to "04" (V-LIN) with the button "2" or "0" on the remote hand unit.
7. Equal a size ratio of the upper and lower of the largest circle in the centre, on the basis of the horizontal marker in the Monoscope signal with the button "7" or "5" on the remote hand unit.
8. Set the adjustment item number to "00" (V-AMP) with the button "2" or "0" on the remote hand unit.
9. Set the central circle of monoscope signal to true circle with the button "7" or "5" on the remote hand unit.
10. Repeat steps above, if necessary.

4. PAL Vertical centre Position	**Adjustment purpose** Vertical position of picture on screen. **Symptom when incorrectly adjusted** Picture too shifted to the upper or the lower.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (monoscope).
2. Select the VCJ adjustment picture.
3. Set the adjustment item number to "08" (V-POSITION) with the button "2" or "0" on the remote hand unit.
4. Set the deviation of horizontal marker of Monoscope within ±3mm from the vertical centre on the screen with the button "7" or "5" on the remote hand unit.

5. NTSC Deflection circuit	**Adjustment purpose** Linearity, position and width of horizontal and vertical and PCC. **Symptom when incorrectly adjusted** Bad linearity, PCC and shifted picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (NTSC Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (NTSC Monoscope).
2. Select the VCJ adjustment picture.
3. Select the Adjustment Item numbers with the button "2" or "0" on the remote hand unit to adjust as shown in table below with the button "7" or "5" on the remote hand unit.

Item Number	33	31	30	2F	32
Data	+5	0	0	+1	−11

6. White	**Adjustment purpose** Rate of electron beam shot from each electron gun of R, G and B. **Symptom when incorrectly adjusted** Coloured monochrome.

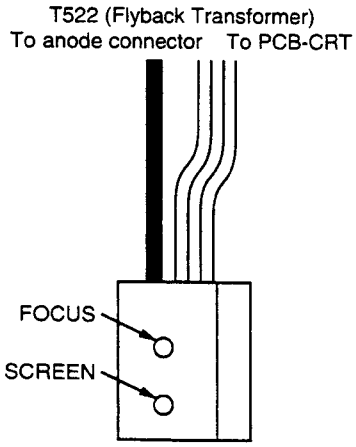
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Monoscope).
2. Select the VCJ adjustment picture.
3. Set the adjustment item number of "0A (B-DRIVE)", "0B (G-DRIVE)" and "0C (R-DRIVE)" to all "0" with the button "2" or "0" and "7" or "5" on the remote hand unit.
4. Adjust the adjustment item numbers "0A (B-DRIVE)" and "0C (R-DRIVE)" to set white on the screen to the best.

7. Focus	**Adjustment purpose** Sharpness of picture. **Symptom when incorrectly adjusted** Poor sharpness of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	RF signal (Programme)
Input terminal	RF IN terminal

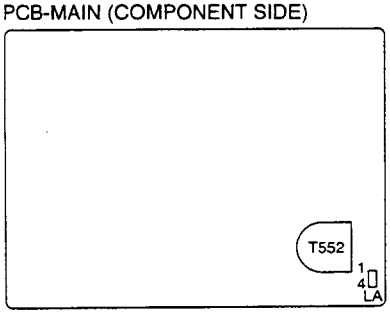
1. Supply an RF signal (programme).
2. Adjust FOCUS control to the best overall focus.



8. Video	**Adjustment purpose** The best value of beam current. **Symptom when incorrectly adjusted** Too bright or too dark picture.

Measuring instrument	DC mili-ammeter
Test point	(+) lead: Connector LA pin ① (–) lead: Connector LA pin ④
EXT trigger	---
Measurement range	---
Input signal	Video signal (monoscope)
Input terminal	VIDEO IN terminal

PCB-MAIN (COMPONENT SIDE)



* This adjustment must follow the Deflection circuit adjustments.
* Preheat the set for twenty minutes or more.

1. Supply a video signal (Monoscope).
2. Select the VCJ adjustment picture.
3. Make sure that Screen Up/Down Request Bit is "00".
   If not so, set it to "00" with the SCREEN control on the Flyback Transformer.
4. Supply a video signal (Cross hatch).
5. Adjust SCREEN control on the Flyback Transformer so that Screen Up/Down Request Bit is "00".
   Supply Monoscope signal again to make sure that Screen Up/Down Request Bit is "00".
6. Supply a video signal (Colour Bar).
7. Set the adjustment item number to "0F" (COLOUR SATURATION) with the button "2" or "0" on the remote hand unit.
8. Set the adjustment data value to "–32" with the button "7" or "5" on the remote hand unit.
9. Set the adjustment item number to "0E" (BRIGHTNESS) with the button "2" or "0" on the remote hand unit.
10. Make sure that the blue bar area does not brighten.
11. Turn the red bar area a little brighter without brightening the former blue bar area with the button "7" or "5" on the remote hand unit.
12. Set the adjustment item number to "0D" (CONTRAST) with the button "2" or "0" on the remote hand unit.
13. Observe the DC voltage at the pin ① of LA connector. (Use the pin ④ of LA connector for ground.)
14. Set the beam current to value of following table with the button "7" or "5" on the remote hand unit.

	25 inch
Beam Current	1200±20μA

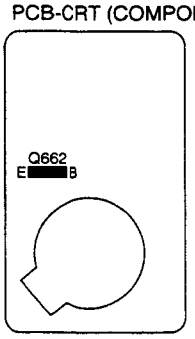
15. If in the Step 14 the blue bar area brightens, set the adjustment item number "0E" (BRIGHTNESS) to dark.
16. Make sure that Screen Up/Down Request Bit is "00".
    If not so, repeat step 1 to 14 above.

NOTE: Adjustment 9 (Colour Output) must be performed immediately after this adjustment.

9. Colour Output	**Adjustment purpose** Colour level of video signal. **Symptom when incorrectly adjusted** Too much or too less colour level.

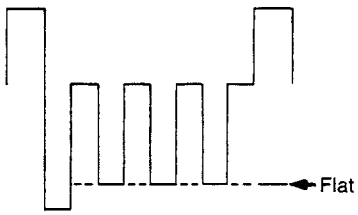
Measuring instrument	Oscilloscope
Test point	base of Q662
EXT trigger	---
Measurement range	DIV 2V TIM 10µs
Input signal	Video signal (colour bar)
Input terminal	RF IN terminal

PCB-CRT (COMPONENT SIDE)

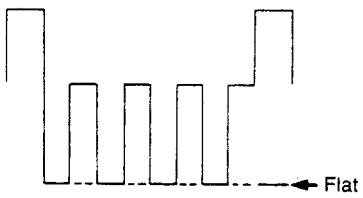


* Perform the adjustment after the White and Video Circuit adjustment.

1. Supply a video signal (PAL Colour bar).
2. Select the VCJ adjustment picture.
3. Observe the waveform at the base of Q662.
4. Set the adjustment item number to "0F" (COLOUR SATURATION) with "2" or "0" on the remote hand unit.
5. Adjust the waveform as shown in figure below with the button "7" or "5" on the remote hand unit.



6. Supply a video signal (NTSC Colour bar).
7. Set the adjustment item number to "10" (HUE) with the button "2" or "0" on the remote hand unit.
8. Adjust the waveform as shown in figure below with the button "7" or "5" on the remote hand unit.



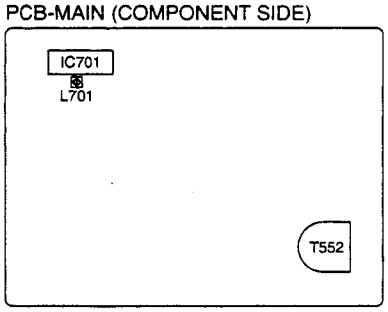
9. After completing the steps above, increase five digits in the adjustment item number "0F" (COLOUR SATURATION).

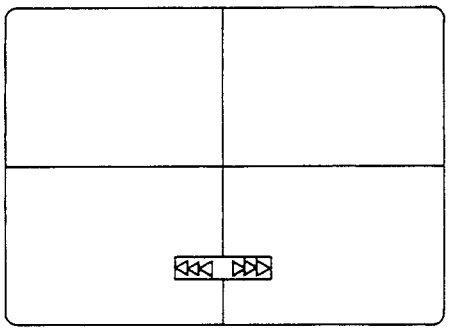
[Micro Computer Circuit] 10. Display Position	**Adjustment purpose** Character position on screen. **Symptom when incorrectly adjusted** Characters too shifted to the left, or the right.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	Video signal (Centre Cross)
Input terminal	VIDEO IN terminal

1. Supply a video signal (Centre Cross).
2. Press "OPTIMUM" button on the remote hand unit.
3. Adjust L701 so that the Powered Swivel Display should be in the middle of the horizontal width of the picture.

PCB-MAIN (COMPONENT SIDE)





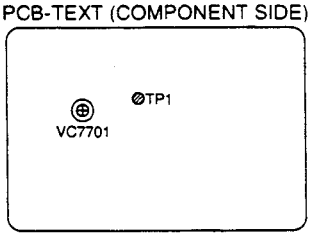
Powered Swivel Display

[Text Circuit] 11. Teletext Free Run Frequency	**Adjustment purpose** The best detect condition of text signal from video signal. **Symptom when incorrectly adjusted** Distorted text display.

Measuring instrument	Frequency counter
Test point	TP1
EXT trigger	---
Measurement range	---
Input signal	---
Input terminal	---

* Preheat the set for five minutes or more.
1. Set the no signal condition in the RF mode.
2. Observe the frequency at TP1.
3. Adjust VC7701 so that the frequency is 6000.2±0.2kHz.

PCB-TEXT (COMPONENT SIDE)



WHEN CHANGING IC702 (EEPROM)

NOTE: When changing IC702 (EEPROM), format it in accordance with step 2 and 3 below.
(Do not perform step 1 and 4.)
NOTE: If formatting IC702 (EEPROM) again, perform step 1 to 4 below.

1. Turn the Main switch off. Connect IC701 pin 23 through 100 Ω (1/4 W) resistor to GND.
2. Turn the Main switch on, when EEPROM starts to be formatted with the STAND BY LED indicating.
   • It will take about three seconds to be formatted.
   • The remote hand unit and the switches of this model can't be performed during format.
3. Press the power button on the remote hand unit to make sure finishing the format.
   When the power turns on, the format is completed.
4. Remove the resistor connected to IC702 pin 23.

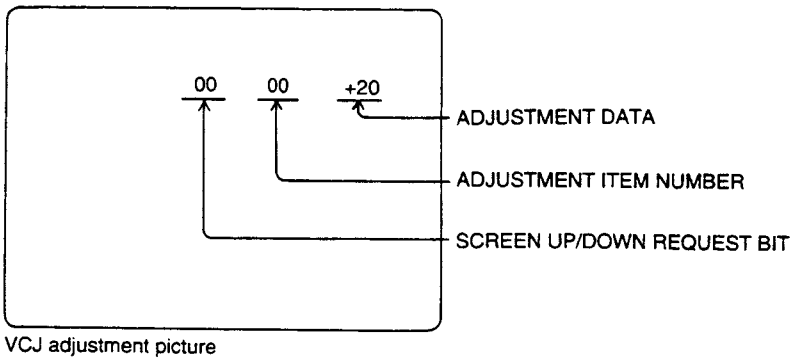
Initial Value of EEPROM

VCJ		
ADJUSTMENT ITEM NUMBER	INITIAL VALUE	ITEM
00	0	V-AMP
01	0	V-BREATHING CORRECTION
02	0	PARABOLA-AMP
03	0	PARABOLA-TILT
04	0	V-LIN
05	0	CORNER CORRECTION
06	0	H-AMP
07	0	—
08	0	V-POSITION
09	0	H-PHASE
0A	0	BLUE DRIVE
0B	0	GREEN DRIVE
0C	0	RED DRIVE
0D	0	CONTRAST
0E	0	BRIGHTNESS
0F	0	COLOUR SATURATION
10	0	HUE
17	101	—
18	010	—
2F	0	V-AMP (NTSC)
30	0	PARABOLA-AMP (NTSC)
31	0	H-AMP (NTSC)
32	0	V-POSITION (NTSC)
33	0	H-PHASE (NTSC)

DUAL SOUND		
ADJUSTMENT ITEM NUMBER	INITIAL VALUE	ITEM
01	+32	K2
OPTION		
03	0	TUNER PACK
04	0	E11/E12
05	0	DUAL SOUND
06	0	COLOUR
07	0	TEXT
08	0	AV4
09	0	NICAM IC

WHEN CHANGING FLYBACK TRANSFORMER

1. Supply RF signal (programme).
2. Press the Service switch (S2J1) and the button "9" on the remote hand unit within five seconds to turn the adjustment mode on.
3. Press "CM" button to select the VCJ Adjustment Picture.
4. Make sure that the Screen Up/Down Request Bit is "00" on both bright and dark pictures.
   If not so, set it to "00" with the Screen Control on the Flyback Transformer.
   Screen Up/Down Request Bit is :
   - "01" : Turn the Screen Control counterclockwise.
   - "10" : Turn the Screen Control clockwise.



VCJ adjustment picture

PARTS LIST
MODEL : CT-33B3EDT

In order to expedite delivery of replacement part orders.

Specify : 1.Model number/Serial number
2.Part number and Description
3.Quantity

Unless full information is supplied,delay in execution of orders will result.

⚠ : Critical components

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	±0.1	±0.25	±0.5	±1	±2	±5	±10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	±20	±30	+10 -10	+40 -20	+80 -20	+100 -0	+30 -10

MARK	B	C	D	F	G
TOLERANCE (pF)	±0.1	±0.25	±0.5	±1	±2

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		TUBES	
⚠ V 271	255P934O10	CRT ASSY	A79ECU13X01
		INTEGRATED CIRCUITS	
IC1A1	272P654O10	IC	M51497L
IC201	272P590O10	IC	MC44000P(D20K-3)
IC202	272P124O10	IC	NJM2209S
IC203	272P181O10	IC	CX20125
IC251	272P027O10	IC	AN5862K
IC2J1	272P575O10	IC	CXA1114P
IC2J2	263P066O20	IC	TC4066BP
IC361	272P459O20	IC	TA8200AH V42<V1>
IC3J1	263P066O20	IC	TC4066BP
IC3S1	272P525O10	IC	µPC1406HA(MS)
IC3S2	266P172O10	IC	M5218L
IC3S3	272P459O20	IC	TA8200AH V42<V1>
IC3302	266P982O10	IC	AN608P
IC3303	266P982O10	IC	AN608P
IC3304	272P666O20	IC	TB1210N
IC3305	272P284O10	IC	TD6710AN
IC3306	272P667O10	IC	AFS816F14000A1
IC3307	266P172O10	IC	M5218L
IC3400	272P655O10	IC	TA7337P
IC3401	263P431O10	IC	MC44130PA
IC3402	263P066O20	IC	TC4066BP
IC451	272P588O20	IC	TDA8178S
IC551	272P406O10	IC	TEA2031A
IC601	272P591O10	IC	MC44140
IC602	272P170O10	IC	TDA4565 CTI
IC701	263P432O20	IC	CXP80424-123S
IC702	263P434O20	IC	X24C04P
IC704	274P008O50	IC	MN1380-T
IC7705	272P096O20	IC	SAA5231
IC7706	272P095O50	IC	SAA5243P
IC7707	263P622O20	IC	HM6264ALSP12
IC7708	274P171O10	IC	ST24C02AB1
IC7709	263P141O10	IC	PCF84C81/049
IC801	272P025O10	IC	LB1645N
IC901	272P514O10	IC	TEA2261
IC950	272P412O10	IC	TEA5170
IC951	267P076O10	IC	SI-3120C
IC952	267P076O30	IC	SI-3050C
IC954	266P922O10	IC	µPC78M05H
IC955	266P010O20	IC	µPC574J-K
		TRANSISTORS	
Q 102	260P543O50	TRANSISTOR	JC501-Q
Q 1A1	260P543O50	TRANSISTOR	JC501-Q
Q 201	260P543O50	TRANSISTOR	JC501-Q
Q 202	260P543O50	TRANSISTOR	JC501-Q
Q 203	260P635O10	TRANSISTOR	2SC3065-F,G
Q 204	260P543O50	TRANSISTOR	JC501-Q
Q 205	260P543O50	TRANSISTOR	JC501-Q
Q 251	260P543O50	TRANSISTOR	JC501-Q
Q 252	260P543O50	TRANSISTOR	JC501-Q
Q 253	260P543O50	TRANSISTOR	JC501-Q
Q 254	260P543O50	TRANSISTOR	JC501-Q
Q 255	260P654O30	TRANSISTOR	2SC2058S-Q
Q 2J1	260P543O50	TRANSISTOR	JC501-Q
Q 2J2	260P543O50	TRANSISTOR	JC501-Q
Q 2J3	260P543O50	TRANSISTOR	JC501-Q
Q 2J4	260P543O50	TRANSISTOR	JC501-Q
Q 2J5	260P544O30	TRANSISTOR	JA101-Q
Q 2K1	260P543O50	TRANSISTOR	JC501-Q
Q 301	260P387O30	TRANSISTOR	2SC2236-Y
Q 3S2	260P543O50	TRANSISTOR	JC501-Q
Q 3S3	260P544O30	TRANSISTOR	JA101-Q
Q 3S4	260P543O50	TRANSISTOR	JC501-Q
Q 3302	260P543O30	TRANSISTOR	JC501-R
Q 3303	260P543O30	TRANSISTOR	JC501-R
Q 3400	260P543O50	TRANSISTOR	JC501-Q
Q 3401	260P543O50	TRANSISTOR	JC501-Q
Q 3402	260P543O50	TRANSISTOR	JC501-Q
Q 3403	260P543O50	TRANSISTOR	JC501-Q
Q 401	260P543O30	TRANSISTOR	JC501-R
Q 402	260P428O20	TRANSISTOR	2SC2168-O,Y
Q 501	260P543O30	TRANSISTOR	JC501-R
Q 551	260P422O10	TRANSISTOR	2SC2482
Q 552	260P608O10	TRANSISTOR	2SD1879
Q 553	260P543O50	TRANSISTOR	JC501-Q
Q 554	260P543O50	TRANSISTOR	JC501-Q
Q 651	260P425O80	TRANSISTOR	2SC688-L,M,N
Q 652	260P425O80	TRANSISTOR	2SC688-L,M,N
Q 653	260P425O80	TRANSISTOR	2SC688-L,M,N
Q 654	260P544O30	TRANSISTOR	JA101-Q
Q 655	260P654O30	TRANSISTOR	2SC2058S-Q
Q 656	260P654O30	TRANSISTOR	2SC2058S-Q
Q 657	260P654O30	TRANSISTOR	2SC2058S-Q
Q 658	260P422O10	TRANSISTOR	2SC2482
Q 659	260P422O10	TRANSISTOR	2SC2482
Q 660	260P422O10	TRANSISTOR	2SC2482
Q 661	260P514O10	TRANSISTOR	BF423
Q 662	260P514O10	TRANSISTOR	BF423
Q 663	260P514O10	TRANSISTOR	BF423
Q 665	260P543O50	TRANSISTOR	JC501-Q
Q 666	260P544O30	TRANSISTOR	JA101-Q
Q 6J1	260P543O50	TRANSISTOR	JC501-Q
Q 702	260P543O50	TRANSISTOR	JC501-Q
Q 703	260P543O50	TRANSISTOR	JC501-Q
Q 704	260P543O50	TRANSISTOR	JC501-Q
Q 705	260P543O50	TRANSISTOR	JC501-Q
Q 706	260P635O10	TRANSISTOR	2SC3065-F,G
Q 707	260P635O10	TRANSISTOR	2SC3065-F,G
Q 708	260P543O50	TRANSISTOR	JC501-Q
Q 709	260P543O50	TRANSISTOR	JC501-Q
Q 710	260P543O50	TRANSISTOR	JC501-Q
Q 7X1	260P544O30	TRANSISTOR	JA101-Q
Q 7X2	260P544O30	TRANSISTOR	JA101-Q
Q 7704	260P654O20	TRANSISTOR	2SC2058S-P
Q 7705	260P543O50	TRANSISTOR	JC501-Q
Q 7707	260P543O50	TRANSISTOR	JC501-Q
Q 7708	260P544O30	TRANSISTOR	JA101-Q

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
Q 801	260P427O20	TRANSISTOR	2SC1826-Y
Q 8X1	260P543O50	TRANSISTOR	JC501-Q
Q 8X2	260P543O50	TRANSISTOR	JC501-Q
Q 901	260P663O10	TRANSISTOR	2SD1887
Q 902	260P543O50	TRANSISTOR	JC501-Q
Q 903	260P543O30	TRANSISTOR	JC501-R
Q 951	260P255O40	TRANSISTOR	2SA950-Y
Q 952	260P325O30	TRANSISTOR	2SC2655-Y
Q 954	260P668O10	TRANSISTOR	2SB1135-R,S
Q 955	260P668O10	TRANSISTOR	2SB1135-R,S
	DIODES		
D 201	264P501O50	DIODE	HZ3BLL
D 202	264P370O10	DIODE	1N4148
D 251	264P370O10	DIODE	1N4148
D 253	264P370O10	DIODE	1N4148
D 254	264P370O10	DIODE	1N4148
D 2J0	264P462O90	DIODE	RD7.5EB3
D 2J1	264P462O90	DIODE	RD7.5EB3
D 2J4	264P462O90	DIODE	RD7.5EB3
D 2J5	264P462O90	DIODE	RD7.5EB3
D 2J6	264P462O90	DIODE	RD7.5EB3
D 2J7	264P462O90	DIODE	RD7.5EB3
D 2J8	264P462O90	DIODE	RD7.5EB3
D 2J9	264P462O90	DIODE	RD7.5EB3
D 2K1	264P462O90	DIODE	RD7.5EB3
D 2K2	264P462O90	DIODE	RD7.5EB3
D 2K3	264P462O90	DIODE	RD7.5EB3
D 2K5	264P370O10	DIODE	1N4148
D 2K6	264P370O10	DIODE	1N4148
D 2K7	264P370O10	DIODE	1N4148
D 2L0	264P462O90	DIODE	RD7.5EB3
D 2L1	264P462O90	DIODE	RD7.5EB3
D 301	264P464O10	DIODE	RD10EB2
D 3S0	264P371O10	DIODE	BYD33G
D 3301	264P370O10	DIODE	1N4148
D 3400	264P370O10	DIODE	1N4148
D 451	264P374O20	DIODE	IN4003ID
D 551	264P371O10	DIODE	BYD33G
D 554	264P375O20	DIODE	BY228 FORMING
D 555	264P378O10	DIODE	BYW96E
D 556	264P371O10	DIODE	BYD33G
D 557	264P461O40	DIODE	RD5.6EB2
D 558	264P370O10	DIODE	1N4148
D 559	264P370O10	DIODE	1N4148
D 560	264P370O10	DIODE	1N4148
D 562	264P371O10	DIODE	BYD33G
D 563	264P371O10	DIODE	BYD33G
D 564	264P464O50	DIODE	RD11EB1
D 565	264P462O90	DIODE	RD7.5EB3
D 566	264P370O10	DIODE	1N4148
D 601	264P370O10	DIODE	1N4148
D 651	264P370O10	DIODE	1N4148
D 652	264P370O10	DIODE	1N4148
D 653	264P370O10	DIODE	1N4148
D 654	264P371O10	DIODE	BYD33G
D 655	264P374O20	DIODE	IN4003ID

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
D 656	264P374O20	DIODE	IN4003ID
D 657	264P374O20	DIODE	IN4003ID
D 6J1	264P462O90	DIODE	RD7.5EB3
D 6J2	264P462O90	DIODE	RD7.5EB3
D 702	264P461O40	DIODE	RD5.6EB2
D 703	264P370O10	DIODE	1N4148
D 7X3	264P584O10	LIGHT EMITTING DIODE	SML1216W
D 7705	264P370O10	DIODE	1N4148
D 7708	264P370O10	DIODE	1N4148
D 7709	264P370O10	DIODE	1N4148
D 7710	264P370O10	DIODE	1N4148
D 7711	264P370O10	DIODE	1N4148
D 7712	264P370O10	DIODE	1N4148
D 7713	264P370O10	DIODE	1N4148
D 7714	264P370O10	DIODE	1N4148
D 7715	264P370O10	DIODE	1N4148
D 801	264P488O40	DIODE	RD13FB3
D 802	264P463O90	DIODE	RD10EB1
D 901	264P376O10	DIODE	BYW56
D 902	264P376O10	DIODE	BYW56
D 903	264P376O10	DIODE	BYW56
D 904	264P376O10	DIODE	BYW56
D 905	264P371O10	DIODE	BYD33G
D 906	264P372O10	DIODE	BYV96E
D 907	264P481O50	DIODE	RD3.0FB1
D 908	264P481O50	DIODE	RD3.0FB1
D 909	264P458O90	DIODE	RD4.3EB2
D 910	264P370O10	DIODE	1N4148
D 911	264P488O80	DIODE	RD15FB3
D 943	264P374O20	DIODE	IN4003ID
D 954	264P358O70	DIODE	RU 4AM
D 955	264P377O10	DIODE	BYW95B
D 957	264P377O10	DIODE	BYW95B
D 958	264P370O10	DIODE	1N4148
D 959	264P370O10	DIODE	1N4148
D 960	264P370O10	DIODE	1N4148
D 961	264P370O10	DIODE	1N4148
D 962	264P370O10	DIODE	1N4148
D 963	264P370O10	DIODE	1N4148
D 964	264P370O10	DIODE	1N4148
D 965	264P588O10	DIODE	FML-G16S
D 966	264P566O10	DIODE	FMP-G12S
D 967	264P566O10	DIODE	FMP-G12S
	OTHER SEMICONDUCTORS		
RP901	265P047O50	POSITIVE THERMISTOR	PTH-BG180M290
	FILTERS		
CF1A1	299P051O50	CERAMIC RESONATOR	CSB500F9
CF3301	299P144O10	CERAMIC RESONATOR	CSA16.93MX040
CF3401	296P071O20	CERAMIC FILTER	
CF3402	299P141O20	CERAMIC RESONATOR	
CF701	299P118O40	CERAMIC RESONATOR	CST4.00MGW
LC3301	409P453O20	BAND PASS FILTER	2080QDAF

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		COILS	
⚠	409B094O10	DEGAUSSING COIL	
L 101	325C124O30	PEAKING COIL	0.22μH-M,K
L 201	325C162O30	PEAKING COIL	68μH-K
L 202	325C120O90	PEAKING COIL	4.7μH-K
L 204	325C120O10	PEAKING COIL	1.0μH-M
L 2J0	325C120O10	PEAKING COIL	1.0μH-M
L 2J1	325C120O10	PEAKING COIL	1.0μH-M
L 2J2	325C120O10	PEAKING COIL	1.0μH-M
L 3J0	325C120O70	PEAKING COIL	3.3μH-K
L 3J1	325C120O70	PEAKING COIL	3.3μH-K
L 3J2	325C120O70	PEAKING COIL	3.3μH-K
L 3J3	325C120O70	PEAKING COIL	3.3μH-K
L 3J4	325C120O70	PEAKING COIL	3.3μH-K
L 3J5	325C120O70	PEAKING COIL	3.3μH-K
L 3J6	325C120O70	PEAKING COIL	3.3μH-K
L 3J7	325C120O70	PEAKING COIL	3.3μH-K
L 3J8	325C120O70	PEAKING COIL	3.3μH-K
L 3J9	325C120O70	PEAKING COIL	3.3μH-K
L 3Y1	325C121O30	PEAKING COIL	10μH-K
L 3Y2	325C121O30	PEAKING COIL	10μH-K
L 3Y3	325C121O30	PEAKING COIL	10μH-K
L 3Y4	325C120O70	PEAKING COIL	3.3μH-K
L 3Y5	325C120O70	PEAKING COIL	3.3μH-K
L 3301	325C121O30	PEAKING COIL	10μH-K
L 3302	325C121O30	PEAKING COIL	10μH-K
L 3303	325C121O30	PEAKING COIL	10μH-K
L 3400	325C110O10	PEAKING COIL	1.0μH-K
L 3401	327P074O10	SIF COIL	5.5/6.0MHz
L 451	411P001O70	FERRITE LEAD	BF60T
L 551	321C030O10	RF COIL	1.0μH-K
L 552	409P408O10	PCC COIL	
L 553	409P407O10	BRIDGE COIL	
L 554	333P032O20	H-LIN.COIL	
L 555	409P006O80	FILTER COIL	6800μH-J
L 556	411D009O20	FERRITE CORE FILTER	
L 701	409P699O10	OSCILLATOR COIL	
L 702	325C110O10	PEAKING COIL	1.0μH-K
L 705	411P001O70	FERRITE LEAD	BF60T
L 706	411P001O70	FERRITE LEAD	BF60T
L 707	411P001O70	FERRITE LEAD	BF60T
L 7701	325C121O50	PEAKING COIL	15μH-K
L 7703	321C031O40	RF COIL	10μH-K
L 901	411P001O70	FERRITE LEAD	BF60T
L 902	411P001O70	FERRITE LEAD	BF60T
L 903	411P001O70	FERRITE LEAD	BF60T
L 904	321C030O50	RF COIL	2.2μH-K
L 951	325D059O60	PEAKING COIL	390μH-K
L 953	409P674O20	FILTER COIL	
L 954	409P674O10	FILTER COIL	
⚠ L 991	351P011O20	LINE FILTER	700MHz
⚠ L 992	351P047O20	LINE FILTER	Z85555TA
⚠ L 994	351P047O20	LINE FILTER	Z85555TA

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		TRANSFORMERS	
T 551	336P009O30	H.DRIVE	
⚠ T 552	334P193O60	FLYBACK	
⚠ T 902	336P023O10	DRIVE	POWER
⚠ T 903	350P510O50	POWER	
		VARIABLE RESISTORS	
VR3301	127C081O50	VR-SEMIFIXED	1/5W B500kΩ-M
		RESISTORS	
⚠ R 363	103P398O40	FUSE	1/2W 2.2Ω-J
R 364	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3S1	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 3T5	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3T6	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3413	103P399O10	FUSE	1/2W 8.2Ω-J
⚠ R 553	103P398O40	FUSE	1/2W 2.2Ω-J
R 554	102P243O30	CEMENT METAL	5W 4.7kΩ-K/J
R 557	102P228O80	CEMENT WIRE	10W 4.7Ω-K/J
⚠ R 558	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 559	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 564	103P442O20	FUSE METAL	1W 560 Ω-K/J
⚠ R 591	103P378O00	FUSE	1/4W 1.0Ω-J
⚠ R 614	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 671	103P438O20	FUSE METAL	2W 1.5Ω-K/J
⚠ R 675	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 676	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 677	103P372O50	FUSE	1/4W 1kΩ-J
R 901	109D075O30	CEMENT WIRE	10W 4.7Ω-K
R 906	102P222O50	CEMENT WIRE	10W 1kΩ-K /J
⚠ R 976	103P397O90	FUSE	1/2W 0.82Ω-J
		CAPACITORS AND TRIMMERS	
C 455	189P081O50	C-M-PP	200V 0.1μF-J
C 558	189P077O70	C-M-PP	400V 0.47μF-J
C 559	189P078O20	C-M-PP	200V 0.82μF-J
C 564	189P081O50	C-M-PP	200V 0.1μF-J
C 904	185D056O50	ELECTROLYTIC-C	H400V 330μF-M
⚠ C 910	189P094O20	C-CERAMIC-AC	ACT4K E3300pF-M
VC7701	202P109O30	TRIMMER CAPACITOR	5.5pF-30pF
		SWITCHES	
S 2J1	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y4	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y5	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y6	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y7	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y8	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y9	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 8A1	439C031O10	LEAF SWITCH	
S 8X1	431C067O10	SLIDE SWITCH	2-2 NON SHORT
S 8X2	431C068O30	SLIDE SWITCH	2-3 NON-SHORT
⚠ S 991	432P076O10	PUSH SWITCH	2-1 AC250V 5A L18

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		MISCELLANEOUS	
⚠	449C081O10	CRT SOCKET	
⚠ F 991	283D091O40	FUSE	T2A H250V
IP101	305P700O40	IF UNIT	SK BG QUASI
J 2J1	449C102O10	SOCKET DIN MINI	4P
J 2J2	451C058O10	CONNECTOR	21P
J 2J3	451C058O10	CONNECTOR	21P
J 2P1	440C200O50	JACK BOARD	PINX3 & SX1+SW
J 3J1	451C114O10	PIN JACK(2P)	RED+WHITE
J 3Y1	451C119O10	HEADPHONE JACK	BLACK
⚠ K 901	287P049O30	POWER RELAY	DJ12D-0(M)-L
TU101	295P397O10	TUNER	TERE8-0F6A
X 3301	285P154O10	CRYSTAL RESONATOR	11.648MHz
X 3302	285P092O10	CRYSTAL RESONATOR	5.85MHz
X 601	285P142O10	CRYSTAL RESONATOR	17.734MHz
X 602	285P143O10	CRYSTAL RESONATOR	14.318MHz
X 7701	285P062O30	CRYSTAL RESONATOR	13.875MHz
X 7702	285P064O30	CRYSTAL RESONATOR	6.000MHz
X 7704	285P118O30	CRYSTAL RESONATOR	9.8304MHz
⚠ Z 551	299P087O60	SURGE PROTECTOR	PRF 2000
Z 701	939P226O20	PREAMP UNIT	SBX160-45
⚠ Z 800	299P087O10	SURGE PROTECTOR	PRF 630
⚠ Z 952	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 953	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 954	299P132O10	SURGE PROTECTOR	PRF 5000
⚠ Z 956	299P132O10	SURGE PROTECTOR	PRF 5000
		PRINTED CIRCUIT BOARD ASSY'S	
⚠	920D405O40	AV PCB ASSY	
⚠	920D320O50	CONTROL PCB ASSY	
⚠	930C457O04	CRT PCB ASSY	
⚠	920D365O01	DST PCB ASSY	
⚠	920D399O50	LED PCB ASSY	
⚠	920A398O04	MAIN PCB ASSY	
⚠	920D475O30	POWER SUB PCB ASSY	
⚠	920D398O50	PREAMP PCB ASSY	
⚠	920D393O50	SW/AT PCB ASSY	
⚠	930C456O10	TEXT PCB ASSY	
		MECHANICAL PARTS	
	669D220O20	SCREW	3X8 46LA005
	669D220O30	SCREW	3X10 46LA005
	669D220O40	SCREW	3X12 46LA005
	669D221O40	SCREW	4X12 46LA005
	669D221O60	SCREW	4X16 46LA005
	669D212O40	SCREW	3X10
		COSMETIC PARTS	
⚠	246C022O70	AC POWER CORD	
⚠	700C154O50	BACK COVER	
	702B784O30	CONTROL BOX	
	702B778O30	DOOR	
	761C437O10	DOOR CATCH	
	700A540O80	FRONT CABINET	
	704C773O20	POWER KNOB	
	734D356O10	PUSH-B KNOB	
	926P014O20	SPEAKER SYSTEM	
	761A084O10	TERMINAL BOARD	
	761B205O30	BASE UNIT	
	589B009O10	GEAR UNIT	
		PACKING PARTS AND ACCESSORY	
	803A318O10	PACKING CUSHION	
⚠	872C082O50	INSTRUCTION BOOK	
	540D165O10	LEAD CLAMPER	
	802B391O10	PACKING CASE	BOTTOM TRAY
	802B391O20	PACKING CASE	SLEEVE
	831D110O90	PACKING BAG	
	831D226O20	PACKING BAG	
⚠	939P403O10	REMOTE HAND UNIT	

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		COILS	
⚠	409B094O10	DEGAUSSING COIL	
L 101	325C124O30	PEAKING COIL	0.22μH-M,K
L 201	325C162O30	PEAKING COIL	68μH-K
L 202	325C120O90	PEAKING COIL	4.7μH-K
L 204	325C120O10	PEAKING COIL	1.0μH-M
L 2J0	325C120O10	PEAKING COIL	1.0μH-M
L 2J1	325C120O10	PEAKING COIL	1.0μH-M
L 2J2	325C120O10	PEAKING COIL	1.0μH-M
L 3J0	325C120O70	PEAKING COIL	3.3μH-K
L 3J1	325C120O70	PEAKING COIL	3.3μH-K
L 3J2	325C120O70	PEAKING COIL	3.3μH-K
L 3J3	325C120O70	PEAKING COIL	3.3μH-K
L 3J4	325C120O70	PEAKING COIL	3.3μH-K
L 3J5	325C120O70	PEAKING COIL	3.3μH-K
L 3J6	325C120O70	PEAKING COIL	3.3μH-K
L 3J7	325C120O70	PEAKING COIL	3.3μH-K
L 3J8	325C120O70	PEAKING COIL	3.3μH-K
L 3J9	325C120O70	PEAKING COIL	3.3μH-K
L 3Y1	325C121O30	PEAKING COIL	10μH-K
L 3Y2	325C121O30	PEAKING COIL	10μH-K
L 3Y3	325C121O30	PEAKING COIL	10μH-K
L 3Y4	325C120O70	PEAKING COIL	3.3μH-K
L 3Y5	325C120O70	PEAKING COIL	3.3μH-K
L 3301	325C121O30	PEAKING COIL	10μH-K
L 3302	325C121O30	PEAKING COIL	10μH-K
L 3303	325C121O30	PEAKING COIL	10μH-K
L 3400	325C110O10	PEAKING COIL	1.0μH-K
L 3401	327P074O10	SIF COIL	5.5/6.0MHz
L 451	411P001O70	FERRITE LEAD	BF60T
L 551	321C030O10	RF COIL	1.0μH-K
L 552	409P408O10	PCC COIL	
L 553	409P407O10	BRIDGE COIL	
L 554	333P032O20	H-LIN.COIL	
L 555	409P006O80	FILTER COIL	6800μH-J
L 556	411D009O20	FERRITE CORE FILTER	
L 701	409P699O10	OSCILLATOR COIL	
L 702	325C110O10	PEAKING COIL	1.0μH-K
L 705	411P001O70	FERRITE LEAD	BF60T
L 706	411P001O70	FERRITE LEAD	BF60T
L 707	411P001O70	FERRITE LEAD	BF60T
L 7701	325C121O50	PEAKING COIL	15μH-K
L 7703	321C031O40	RF COIL	10μH-K
L 901	411P001O70	FERRITE LEAD	BF60T
L 902	411P001O70	FERRITE LEAD	BF60T
L 903	411P001O70	FERRITE LEAD	BF60T
L 904	321C030O50	RF COIL	2.2μH-K
L 951	325D059O60	PEAKING COIL	390μH-K
L 953	409P674O20	FILTER COIL	
L 954	409P674O10	FILTER COIL	
⚠ L 991	351P011O20	LINE FILTER	700MHz
⚠ L 992	351P047O20	LINE FILTER	Z85555TA
⚠ L 994	351P047O20	LINE FILTER	Z85555TA

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		TRANSFORMERS	
T 551	336P009O30	H.DRIVE	
⚠ T 552	334P193O60	FLYBACK	
⚠ T 902	336P023O10	DRIVE	POWER
⚠ T 903	350P510O50	POWER	
		VARIABLE RESISTORS	
VR3301	127C081O50	VR-SEMIFIXED	1/5W B500kΩ-M
		RESISTORS	
⚠ R 363	103P398O40	FUSE	1/2W 2.2Ω-J
R 364	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3S1	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 3T5	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3T6	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3413	103P399O10	FUSE	1/2W 8.2Ω-J
⚠ R 553	103P398O40	FUSE	1/2W 2.2Ω-J
R 554	102P243O30	CEMENT METAL	5W 4.7kΩ-K/J
R 557	102P228O80	CEMENT WIRE	10W 4.7Ω-K/J
⚠ R 558	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 559	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 564	103P442O20	FUSE METAL	1W 560 Ω-K/J
⚠ R 591	103P378O00	FUSE	1/4W 1.0Ω-J
⚠ R 614	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 671	103P438O20	FUSE METAL	2W 1.5Ω-K/J
⚠ R 675	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 676	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 677	103P372O50	FUSE	1/4W 1kΩ-J
R 901	109D075O30	CEMENT WIRE	10W 4.7Ω-K
R 906	102P222O50	CEMENT WIRE	10W 1kΩ-K /J
⚠ R 976	103P397O90	FUSE	1/2W 0.82Ω-J
		CAPACITORS AND TRIMMERS	
C 455	189P081O50	C-M-PP	200V 0.1μF-J
C 558	189P077O70	C-M-PP	400V 0.47μF-J
C 559	189P078O20	C-M-PP	200V 0.82μF-J
C 564	189P081O50	C-M-PP	200V 0.1μF-J
C 904	185D056O50	ELECTROLYTIC-C	H400V 330μF-M
⚠ C 910	189P094O20	C-CERAMIC-AC	ACT4K E3300pF-M
VC7701	202P109O30	TRIMMER CAPACITOR	5.5pF-30pF
		SWITCHES	
S 2J1	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y4	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y5	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y6	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y7	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y8	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y9	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 8A1	439C031O10	LEAF SWITCH	
S 8X1	431C067O10	SLIDE SWITCH	2-2 NON SHORT
S 8X2	431C068O30	SLIDE SWITCH	2-3 NON-SHORT
⚠ S 991	432P076O10	PUSH SWITCH	2-1 AC250V 5A L18

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		MISCELLANEOUS	
⚠	449C081O10	CRT SOCKET	
⚠ F 991	283D091O40	FUSE	T2A H250V
IP101	305P700O40	IF UNIT	SK BG QUASI
J 2J1	449C102O10	SOCKET DIN MINI	4P
J 2J2	451C058O10	CONNECTOR	21P
J 2J3	451C058O10	CONNECTOR	21P
J 2P1	440C200O50	JACK BOARD	PINX3 & SX1+SW
J 3J1	451C114O10	PIN JACK(2P)	RED+WHITE
J 3Y1	451C119O10	HEADPHONE JACK	BLACK
⚠ K 901	287P049O30	POWER RELAY	DJ12D-0(M)-L
TU101	295P397O10	TUNER	TERE8-0F6A
X 3301	285P154O10	CRYSTAL RESONATOR	11.648MHz
X 3302	285P092O10	CRYSTAL RESONATOR	5.85MHz
X 601	285P142O10	CRYSTAL RESONATOR	17.734MHz
X 602	285P143O10	CRYSTAL RESONATOR	14.318MHz
X 7701	285P062O30	CRYSTAL RESONATOR	13.875MHz
X 7702	285P064O30	CRYSTAL RESONATOR	6.000MHz
X 7704	285P118O30	CRYSTAL RESONATOR	9.8304MHz
⚠ Z 551	299P087O60	SURGE PROTECTOR	PRF 2000
Z 701	939P226O20	PREAMP UNIT	SBX160-45
⚠ Z 800	299P087O10	SURGE PROTECTOR	PRF 630
⚠ Z 952	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 953	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 954	299P132O10	SURGE PROTECTOR	PRF 5000
⚠ Z 956	299P132O10	SURGE PROTECTOR	PRF 5000
		PRINTED CIRCUIT BOARD ASSY'S	
⚠	920D405O40	AV PCB ASSY	
⚠	920D320O50	CONTROL PCB ASSY	
⚠	930C457O04	CRT PCB ASSY	
⚠	920D365O01	DST PCB ASSY	
⚠	920D399O50	LED PCB ASSY	
⚠	920A398O04	MAIN PCB ASSY	
⚠	920D475O30	POWER SUB PCB ASSY	
⚠	920D398O50	PREAMP PCB ASSY	
⚠	920D393O50	SW/AT PCB ASSY	
⚠	930C456O10	TEXT PCB ASSY	
		MECHANICAL PARTS	
	669D220O20	SCREW	3X8 46LA005
	669D220O30	SCREW	3X10 46LA005
	669D220O40	SCREW	3X12 46LA005
	669D221O40	SCREW	4X12 46LA005
	669D221O60	SCREW	4X16 46LA005
	669D212O40	SCREW	3X10
		COSMETIC PARTS	
⚠	246C022O70	AC POWER CORD	
⚠	700C154O50	BACK COVER	
	702B784O30	CONTROL BOX	
	702B778O30	DOOR	
	761C437O10	DOOR CATCH	
	700A540O80	FRONT CABINET	
	704C773O20	POWER KNOB	
	734D356O10	PUSH-B KNOB	

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	926P014O20	SPEAKER SYSTEM	
	761A084O10	TERMINAL BOARD	
	761B205O30	BASE UNIT	
	589B009O10	GEAR UNIT	
		PACKING PARTS AND ACCESSORY	
	803A318O10	PACKING CUSHION	
⚠	872C082O50	INSTRUCTION BOOK	
	540D165O10	LEAD CLAMPER	
	802B391O10	PACKING CASE	BOTTOM TRAY
	802B391O20	PACKING CASE	SLEEVE
	831D110O90	PACKING BAG	
	831D226O20	PACKING BAG	
⚠	939P403O10	REMOTE HAND UNIT	

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		COILS	
⚠	409B094O10	DEGAUSSING COIL	
L 101	325C124O30	PEAKING COIL	0.22μH-M,K
L 201	325C162O30	PEAKING COIL	68μH-K
L 202	325C120O90	PEAKING COIL	4.7μH-K
L 204	325C120O10	PEAKING COIL	1.0μH-M
L 2J0	325C120O10	PEAKING COIL	1.0μH-M
L 2J1	325C120O10	PEAKING COIL	1.0μH-M
L 2J2	325C120O10	PEAKING COIL	1.0μH-M
L 3J0	325C120O70	PEAKING COIL	3.3μH-K
L 3J1	325C120O70	PEAKING COIL	3.3μH-K
L 3J2	325C120O70	PEAKING COIL	3.3μH-K
L 3J3	325C120O70	PEAKING COIL	3.3μH-K
L 3J4	325C120O70	PEAKING COIL	3.3μH-K
L 3J5	325C120O70	PEAKING COIL	3.3μH-K
L 3J6	325C120O70	PEAKING COIL	3.3μH-K
L 3J7	325C120O70	PEAKING COIL	3.3μH-K
L 3J8	325C120O70	PEAKING COIL	3.3μH-K
L 3J9	325C120O70	PEAKING COIL	3.3μH-K
L 3Y1	325C121O30	PEAKING COIL	10μH-K
L 3Y2	325C121O30	PEAKING COIL	10μH-K
L 3Y3	325C121O30	PEAKING COIL	10μH-K
L 3Y4	325C120O70	PEAKING COIL	3.3μH-K
L 3Y5	325C120O70	PEAKING COIL	3.3μH-K
L 3301	325C121O30	PEAKING COIL	10μH-K
L 3302	325C121O30	PEAKING COIL	10μH-K
L 3303	325C121O30	PEAKING COIL	10μH-K
L 3400	325C110O10	PEAKING COIL	1.0μH-K
L 3401	327P074O10	SIF COIL	5.5/6.0MHz
L 451	411P001O70	FERRITE LEAD	BF60T
L 551	321C030O10	RF COIL	1.0μH-K
L 552	409P408O10	PCC COIL	
L 553	409P407O10	BRIDGE COIL	
L 554	333P032O20	H-LIN.COIL	
L 555	409P006O80	FILTER COIL	6800μH-J
L 556	411D009O20	FERRITE CORE FILTER	
L 701	409P699O10	OSCILLATOR COIL	
L 702	325C110O10	PEAKING COIL	1.0μH-K
L 705	411P001O70	FERRITE LEAD	BF60T
L 706	411P001O70	FERRITE LEAD	BF60T
L 707	411P001O70	FERRITE LEAD	BF60T
L 7701	325C121O50	PEAKING COIL	15μH-K
L 7703	321C031O40	RF COIL	10μH-K
L 901	411P001O70	FERRITE LEAD	BF60T
L 902	411P001O70	FERRITE LEAD	BF60T
L 903	411P001O70	FERRITE LEAD	BF60T
L 904	321C030O50	RF COIL	2.2μH-K
L 951	325D059O60	PEAKING COIL	390μH-K
L 953	409P674O20	FILTER COIL	
L 954	409P674O10	FILTER COIL	
⚠ L 991	351P011O20	LINE FILTER	700MHz
⚠ L 992	351P047O20	LINE FILTER	Z85555TA
⚠ L 994	351P047O20	LINE FILTER	Z85555TA

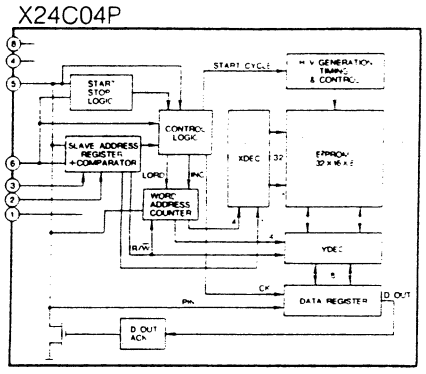
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		TRANSFORMERS	
T 551	336P009O30	H.DRIVE	
⚠ T 552	334P193O60	FLYBACK	
⚠ T 902	336P023O10	DRIVE	POWER
⚠ T 903	350P510O50	POWER	
		VARIABLE RESISTORS	
VR3301	127C081O50	VR-SEMIFIXED	1/5W B500kΩ-M
		RESISTORS	
⚠ R 363	103P398O40	FUSE	1/2W 2.2Ω-J
R 364	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3S1	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 3T5	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3T6	103P398O40	FUSE	1/2W 2.2Ω-J
⚠ R 3413	103P399O10	FUSE	1/2W 8.2Ω-J
⚠ R 553	103P398O40	FUSE	1/2W 2.2Ω-J
R 554	102P243O30	CEMENT METAL	5W 4.7kΩ-K/J
R 557	102P228O80	CEMENT WIRE	10W 4.7Ω-K/J
⚠ R 558	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 559	103P397O90	FUSE	1/2W 0.82Ω-J
⚠ R 564	103P442O20	FUSE METAL	1W 560 Ω-K/J
⚠ R 591	103P378O00	FUSE	1/4W 1.0Ω-J
⚠ R 614	103P370O10	FUSE	1/4W 10Ω-J
⚠ R 671	103P438O20	FUSE METAL	2W 1.5Ω-K/J
⚠ R 675	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 676	103P372O50	FUSE	1/4W 1kΩ-J
⚠ R 677	103P372O50	FUSE	1/4W 1kΩ-J
R 901	109D075O30	CEMENT WIRE	10W 4.7Ω-K
R 906	102P222O50	CEMENT WIRE	10W 1kΩ-K /J
⚠ R 976	103P397O90	FUSE	1/2W 0.82Ω-J
		CAPACITORS AND TRIMMERS	
C 455	189P081O50	C-M-PP	200V 0.1μF-J
C 558	189P077O70	C-M-PP	400V 0.47μF-J
C 559	189P078O20	C-M-PP	200V 0.82μF-J
C 564	189P081O50	C-M-PP	200V 0.1μF-J
C 904	185D056O50	ELECTROLYTIC-C	H400V 330μF-M
⚠ C 910	189P094O20	C-CERAMIC-AC	ACT4K E3300pF-M
VC7701	202P109O30	TRIMMER CAPACITOR	5.5pF-30pF
		SWITCHES	
S 2J1	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y4	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y5	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y6	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y7	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y8	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 7Y9	432P101O10	KEY BOARD SWITCH	1-1 H=4.3
S 8A1	439C031O10	LEAF SWITCH	
S 8X1	431C067O10	SLIDE SWITCH	2-2 NON SHORT
S 8X2	431C068O30	SLIDE SWITCH	2-3 NON-SHORT
⚠ S 991	432P076O10	PUSH SWITCH	2-1 AC250V 5A L18

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
		MISCELLANEOUS	
⚠	449C081O10	CRT SOCKET	
⚠ F 991	283D091O40	FUSE	T2A H250V
IP101	305P700O40	IF UNIT	SK BG QUASI
J 2J1	449C102O10	SOCKET DIN MINI	4P
J 2J2	451C058O10	CONNECTOR	21P
J 2J3	451C058O10	CONNECTOR	21P
J 2P1	440C200O50	JACK BOARD	PINX3 & SX1+SW
J 3J1	451C114O10	PIN JACK(2P)	RED+WHITE
J 3Y1	451C119O10	HEADPHONE JACK	BLACK
⚠ K 901	287P049O30	POWER RELAY	DJ12D-0(M)-L
TU101	295P397O10	TUNER	TERE8-0F6A
X 3301	285P154O10	CRYSTAL RESONATOR	11.648MHz
X 3302	285P092O10	CRYSTAL RESONATOR	5.85MHz
X 601	285P142O10	CRYSTAL RESONATOR	17.734MHz
X 602	285P143O10	CRYSTAL RESONATOR	14.318MHz
X 7701	285P062O30	CRYSTAL RESONATOR	13.875MHz
X 7702	285P064O30	CRYSTAL RESONATOR	6.000MHz
X 7704	285P118O30	CRYSTAL RESONATOR	9.8304MHz
⚠ Z 551	299P087O60	SURGE PROTECTOR	PRF 2000
Z 701	939P226O20	PREAMP UNIT	SBX160-45
⚠ Z 800	299P087O10	SURGE PROTECTOR	PRF 630
⚠ Z 952	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 953	299P087O80	SURGE PROTECTOR	PRF 3150
⚠ Z 954	299P132O10	SURGE PROTECTOR	PRF 5000
⚠ Z 956	299P132O10	SURGE PROTECTOR	PRF 5000
		PRINTED CIRCUIT BOARD ASSY'S	
⚠	920D405O40	AV PCB ASSY	
⚠	920D320O50	CONTROL PCB ASSY	
⚠	930C457O04	CRT PCB ASSY	
⚠	920D365O01	DST PCB ASSY	
⚠	920D399O50	LED PCB ASSY	
⚠	920A398O04	MAIN PCB ASSY	
⚠	920D475O30	POWER SUB PCB ASSY	
⚠	920D398O50	PREAMP PCB ASSY	
⚠	920D393O50	SW/AT PCB ASSY	
⚠	930C456O10	TEXT PCB ASSY	
		MECHANICAL PARTS	
	669D220O20	SCREW	3X8 46LA005
	669D220O30	SCREW	3X10 46LA005
	669D220O40	SCREW	3X12 46LA005
	669D221O40	SCREW	4X12 46LA005
	669D221O60	SCREW	4X16 46LA005
	669D212O40	SCREW	3X10
		COSMETIC PARTS	
⚠	246C022O70	AC POWER CORD	
⚠	700C154O50	BACK COVER	
	702B784O30	CONTROL BOX	
	702B778O30	DOOR	
	761C437O10	DOOR CATCH	
	700A540O80	FRONT CABINET	
	704C773O20	POWER KNOB	
	734D356O10	PUSH-B KNOB	

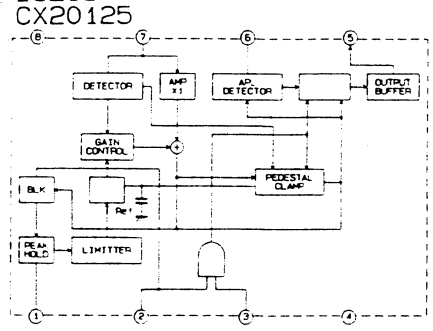
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	926P014O20	SPEAKER SYSTEM	
	761A084O10	TERMINAL BOARD	
	761B205O30	BASE UNIT	
	589B009O10	GEAR UNIT	
		PACKING PARTS AND ACCESSORY	
	803A318O10	PACKING CUSHION	
⚠	872C082O50	INSTRUCTION BOOK	
	540D165O10	LEAD CLAMPER	
	802B391O10	PACKING CASE	BOTTOM TRAY
	802B391O20	PACKING CASE	SLEEVE
	831D110O90	PACKING BAG	
	831D226O20	PACKING BAG	
⚠	939P403O10	REMOTE HAND UNIT	

IC BLOCK DIAGRAM

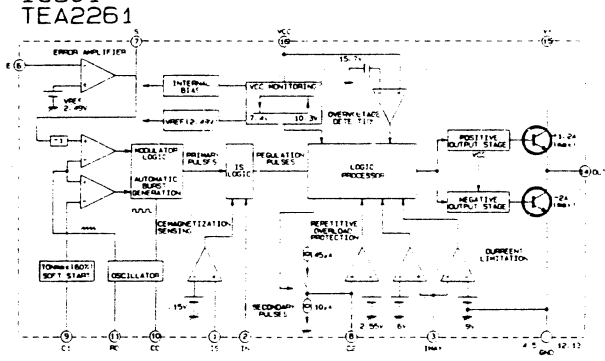
IC702
X24C04P



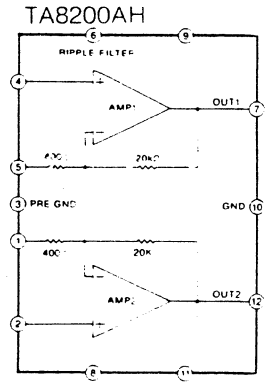
IC203
CX20125



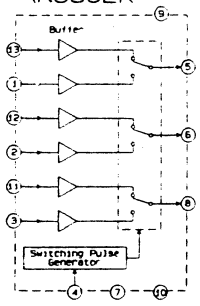
IC901
TEA2261



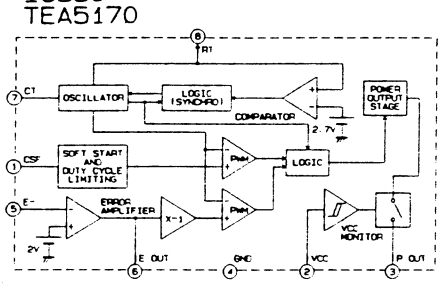
IC361
TA8200AH



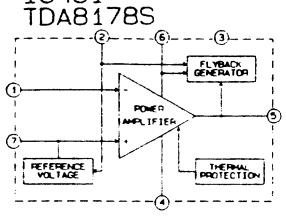
IC251
4N5862K



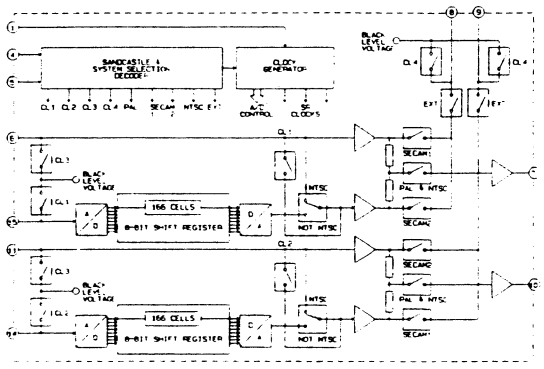
IC950
TEA5170



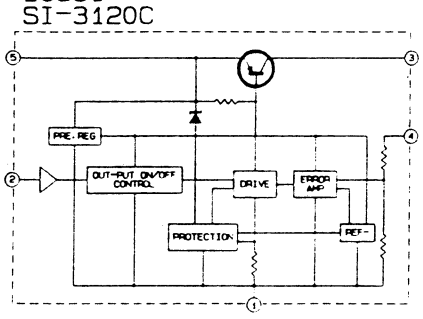
IC451
TDA8178S



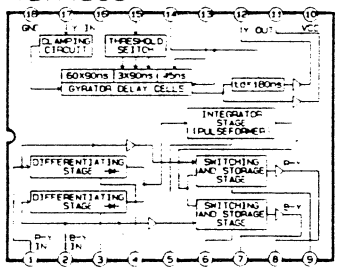
IC601
MC44140



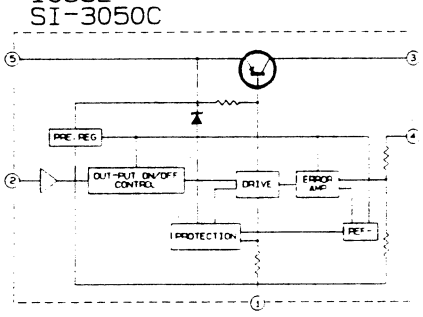
IC951
SI-3120C



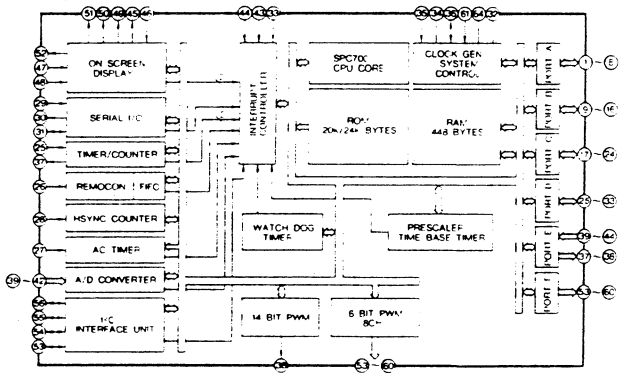
IC602
TDA4565



IC952
SI-3050C

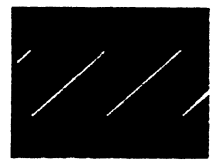


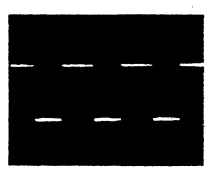
IC701
CXP80424

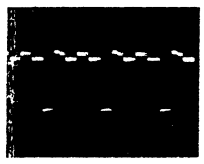


CHASSIS WAVEFORMS

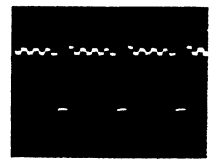
①2.0Vp-p(H)

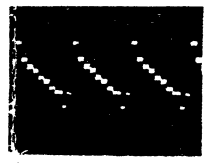

②1.8Vp-p(V)

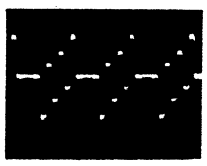

③0.7Vp-p(H)

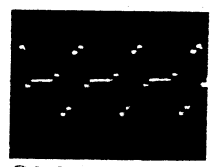

④2.3Vp-p(H)

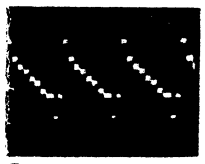
⑤2.2Vp-p(H)

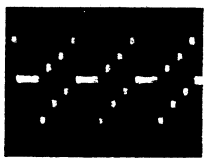

⑥2.3Vp-p(H)

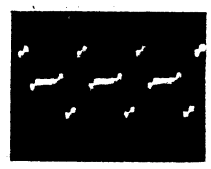

⑦0.7Vp-p(H)


⑧0.9Vp-p(H)

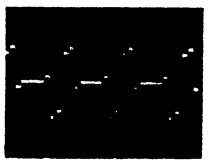

⑨0.8Vp-p(H)

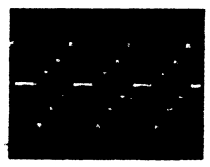

⑩0.8Vp-p(H)


⑪1.0Vp-p(H)

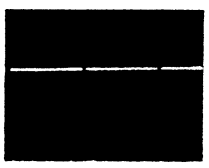

⑫0.8Vp-p(H)

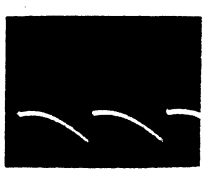
⑬0.9Vp-p(H)

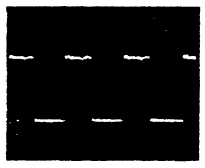

⑭0.8Vp-p(H)

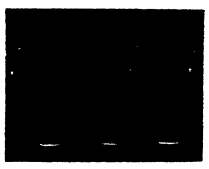

⑮0.9Vp-p(H)

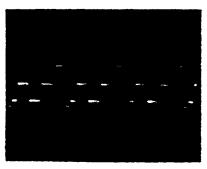
⑯0.8Vp-p(H)

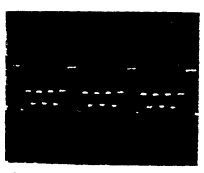

⑰0.5Vp-p(V)

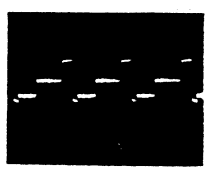

⑱60.0Vp-p(V)


⑲0.8Vp-p(H)

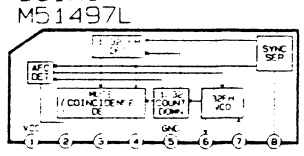

⑳124.0Vp-p(H)


㉑140.0Vp-p(H)

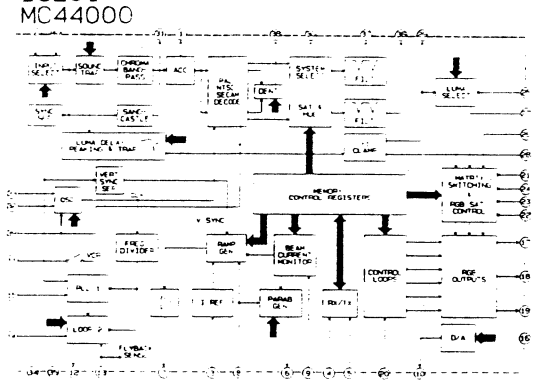

㉒150.0Vp-p(H)


㉓140.0Vp-p(H)

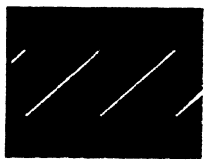
IC1A1
M51497L



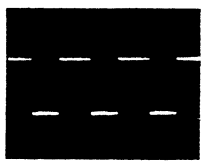
IC201
MC44000



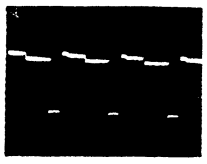
S WAVEFORMS



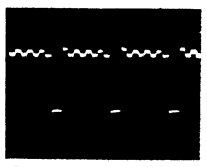
②1.8Vp-p(V)



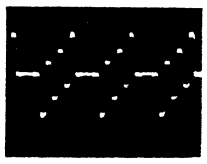
③0.7Vp-p(H)



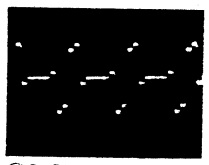
⑤2.2Vp-p(H)



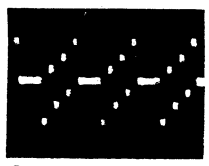
⑥2.3Vp-p(H)



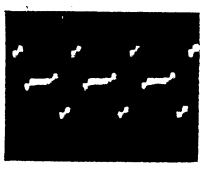
⑧0.9Vp-p(H)



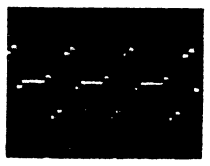
⑨0.8Vp-p(H)



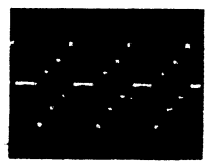
⑪1.0Vp-p(H)



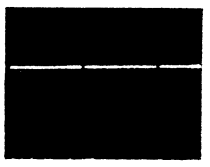
⑫0.8Vp-p(H)



⑭0.8Vp-p(H)

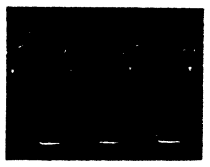


⑮0.9Vp-p(H)

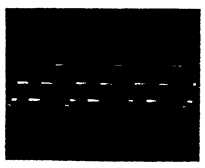


⑰0.5Vp-p(V)

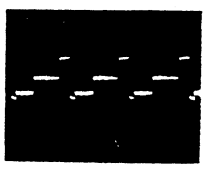
⑱60.0Vp-p(V)



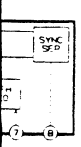
⑳124.0Vp-p(H)

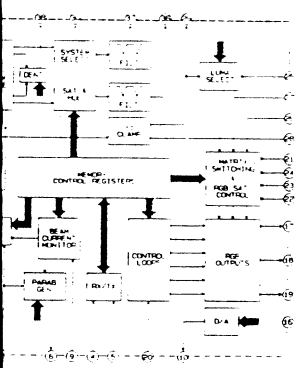


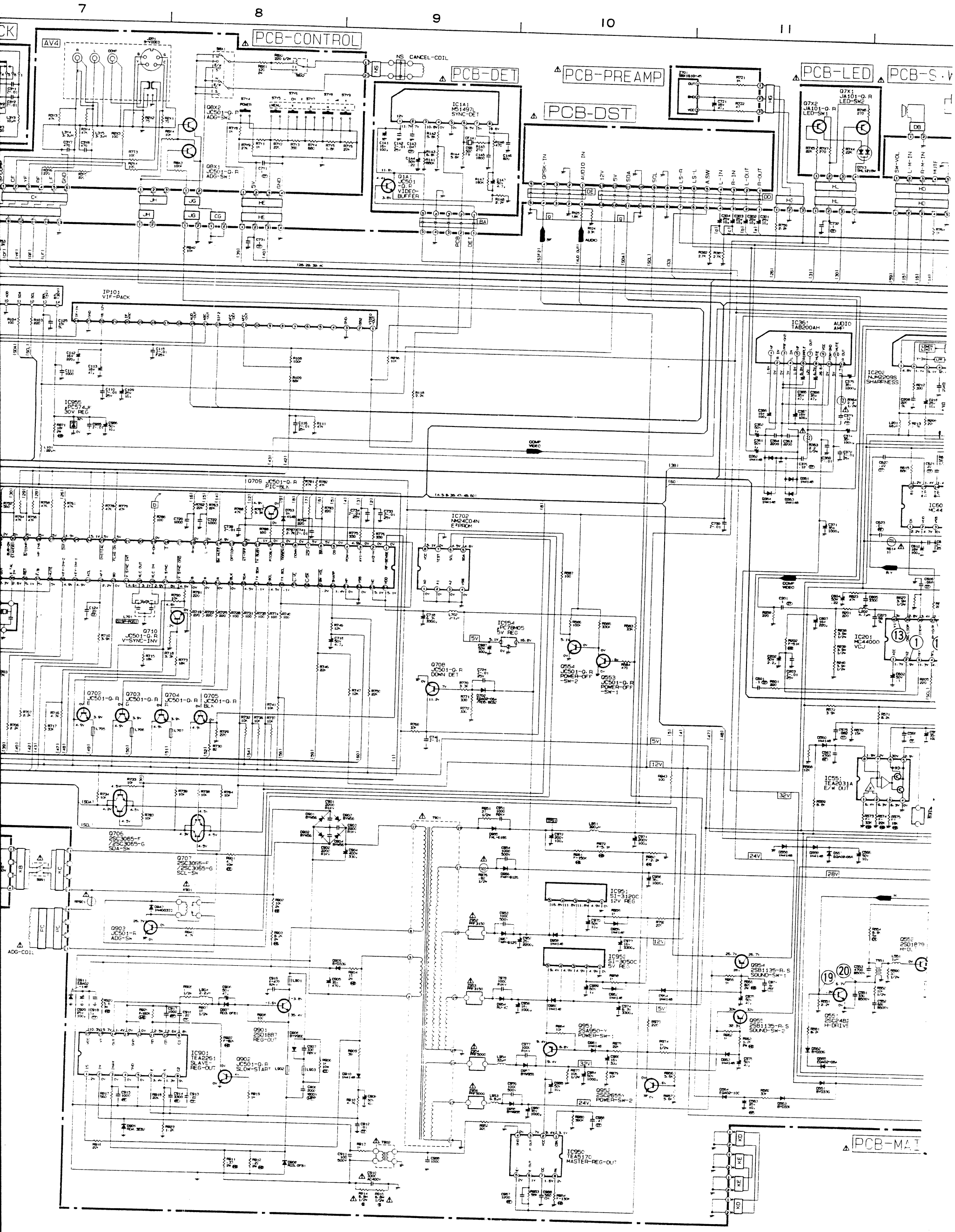
㉑140.0Vp-p(H)

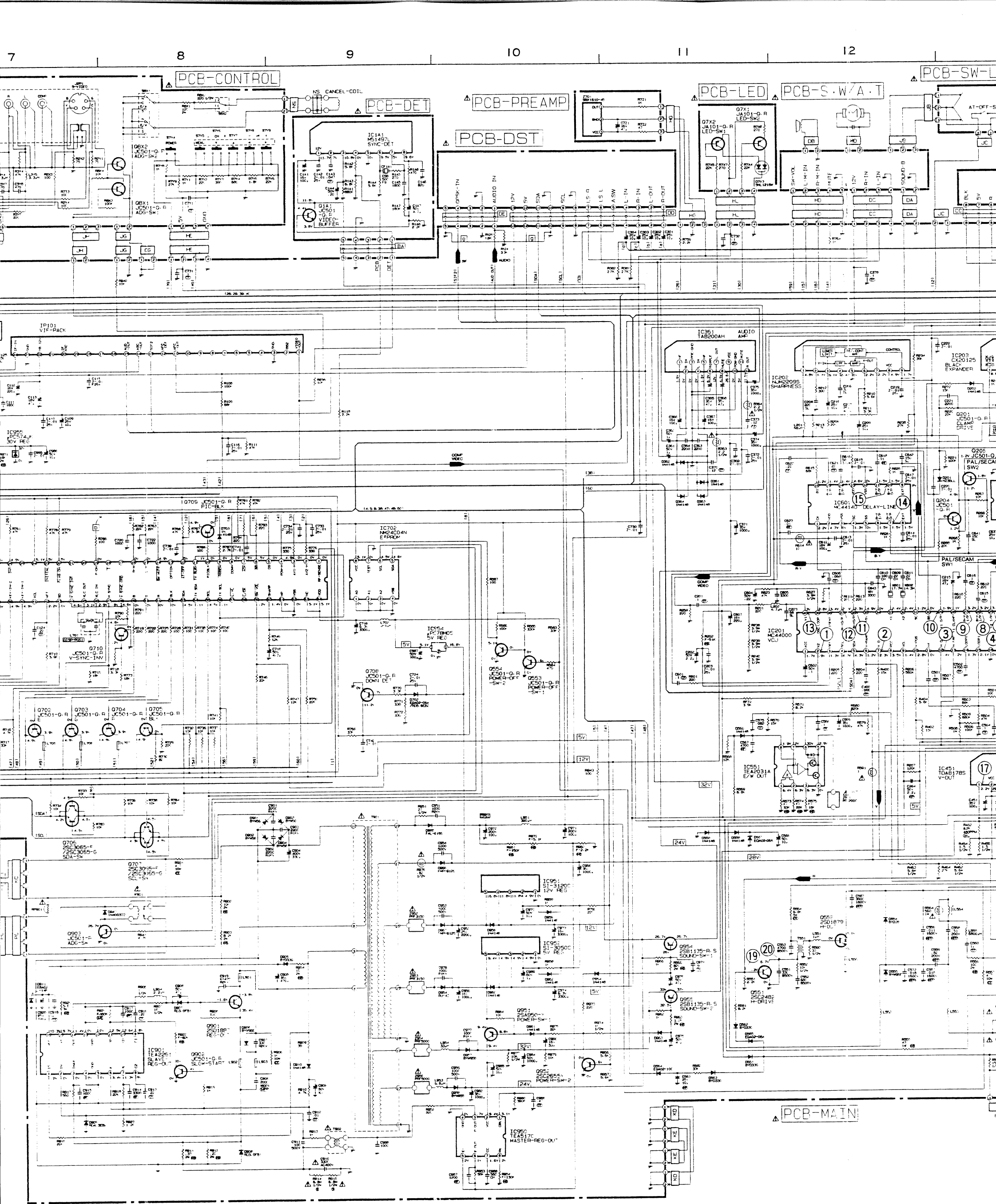


㉓140.0Vp-p(H)

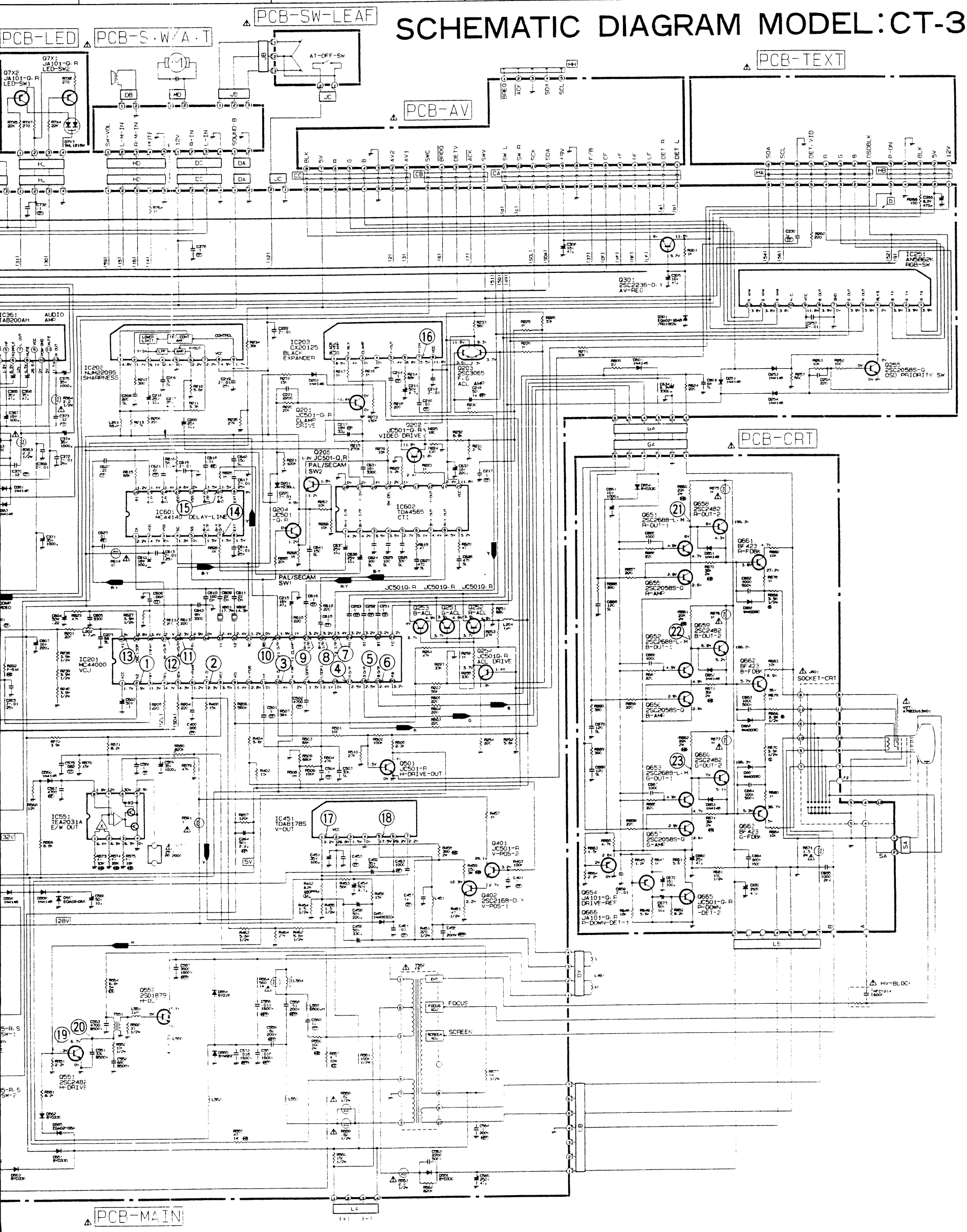





PCB-CONTROL
PCB-DET
PCB-PREAMP
PCB-DST
PCB-LED
PCB-S·W
PCB-MAIN
AV4
NS CANCEL-COIL
IC1A1 M51497L SYNC-DET
Q8X2 JC501-Q.P ADG-SW
Q8X1 JC501-Q.P ADG-SW
Q1A1 JC501-Q.P VIDEO-BUFFER
OPSK-IN
AUDIO IN
12V
5V
SDA
SCL
LS-R
LS-L
A.SW
L-IN
R-IN
L-OUT
R-OUT
Q7X1 JA101-Q.R LED-SW2
Q7X2 JA101-Q.R LED-SW1
SW-VOL
L-M-IN
R-M-IN
M.TF
IP101 VIF-PACK
IC955 PC574J/F 30V REG
IC361 TAB200AH AUDIO AMP
IC202 NJM2209S SHARPNESS
Q709 JC501-Q.R PIC-BLK
IC702 NM24C04N EPPROM
IC954 PC78M05 5V REG
Q710 JC501-Q.R V-SYNC-INV
Q708 JC501-Q.R DOWN DET
Q554 JC501-Q.R POWER-OFF SW-2
Q553 JC501-Q.R POWER-OFF SW-1
Q702 JC501-Q.R
Q703 JC501-Q.R
Q704 JC501-Q.R
Q705 JC501-Q.R BLK
IC201 MC44000 VCJ
IC55: TEA2031A E/W OUT
Q706 2SC3065-F /2SC3065-G SDA-SW
Q707 2SC3065-F /2SC3065-G SCL-SW
Q903 JC501-R ADG-SW
IC951 SI-3120C 12V REG
IC952 SI-3050C 5V REG
Q954 2SB1135-R,S SOUND-SW-1
Q955 2SB1135-R,S SOUND-SW-2
Q951 2SA950-Y POWER-SW-1
Q952 2SC2655Y POWER-SW-2
Q955 2SD1879 H-DRIVE
IC901 TEA2261 SLAVE-REG-OUT
Q901 2SD1887 REG-OUT
Q902 JC501-Q.P SLOW-START
IC950 TEA517C MASTER-REG-OUT
IC55: TEA2031A E/W OUT
ADG-COIL
5V
12V
24V
28V
32V


7
8
9
10
11
12
PCB-CONTROL
PCB-DET
PCB-PREAMP
PCB-DST
PCB-LED
PCB-S·W/A·T
PCB-SW-L
NS CANCEL-COIL
IC1A1 M51497L SYNC-DET
Q1A1 JC501 -Q.P VIDEO BUFFER
Q8X2 JC501-Q.R ADG-SW1
Q8X1 JC501-Q.R ADG-SW2
Q7X1 JA101-Q.R LED-SW1
Q7X2 JA101-Q.R LED-SW2
IP101 VIF-PACK
IC955 PC574J 30V REG
IC361 TA8200AH AUDIO AMP
IC202 NJM2095 SHARPNESS
IC203 CX20125 BLACK EXPANDER
Q205 JC501-Q.R CLAMP DRIVE
Q204 JC501 -Q.R
IC60: MC44140 DELAY-LINE
PAL/SECAM SW1
IC702 NM24C04N EPROM
IC554 PQ78M05 5V REG
Q710 JC501-Q.R V-SYNC-INV
Q706 JC501-Q.R DOWN DET
Q554 JC501-Q.R POWER-OFF -SW-2
Q553 JC501-Q.R POWER-OFF -SW-1
Q702 JC501-Q.R E
Q703 JC501-Q.R G
Q704 JC501-Q.R R
Q705 JC501-Q.R BL
IC201 MC44000 VCU
IC551 TEA2031A E/W OUT
IC451 TDA8178S V-OUT
Q706 2SC3065-F /2SC3065-G SDA-SW
Q707 2SC3065-F /2SC3065-G SCL-SW
Q708 JC501-Q.R ADG-SW
IC95: SI-3120C 12V REG
IC95: SI-3050C 5V REG
Q952 2SB1135-R,S SOUND-SW-1
Q955 2SB1135-R,S SOUND-SW-2
Q952 2SD1879 H-DRIVE
Q955 2SC2482 H-DRIVE
Q951 2SA950-Y POWER-SW-1
Q955 2SC2655-Y POWER-SW-2
IC90: TEA2261 AV REG-OUT
Q902 JC501-Q.R SLOW-START
Q901 2SD188 REG-OUT
IC950 TEA517C MASTER-REG-OUT
PCB-MAIN

SCHEMATIC DIAGRAM MODEL:CT-33B3EDT



⚠ SERVICING PRECAUTI

SYMBOLS INDICATE COM
CHARACTERISTICS IMPORT
PERFORMANCE. THERFORE
SAFETY PARTS SHOULD BE
CHARACTERISTICS. FOR
REPLACEMENT REFER TO TH
MANUAL.
DON'T DEGRADE THE SA
THROUGH IMPROPER SERVIC

• **NOTE**

1. DC voltages were measured
   ground with a high-Z voltmet
2. Waveforms were taken with
3. TP6A, etc. show Test Points
4. CAPACITORS

Value	Not indicated	
Dielectric Strength	Not indicated :50	
Tolerance	Not indicated =±	G =±2% J =±5% K =±10% M=±20% P Z
Sort	I Parts except for chips	Not in (MF) (PP) (ALM) (TF) (SC) (MP) (MPP) (MMF) (MF,PP) (PS) (TAN) (BP)or
	II Chips	Not in (BP)or
Characteristic (only ceramic capacitor)	Not indicated CH,SL,etc	

5. Resistors

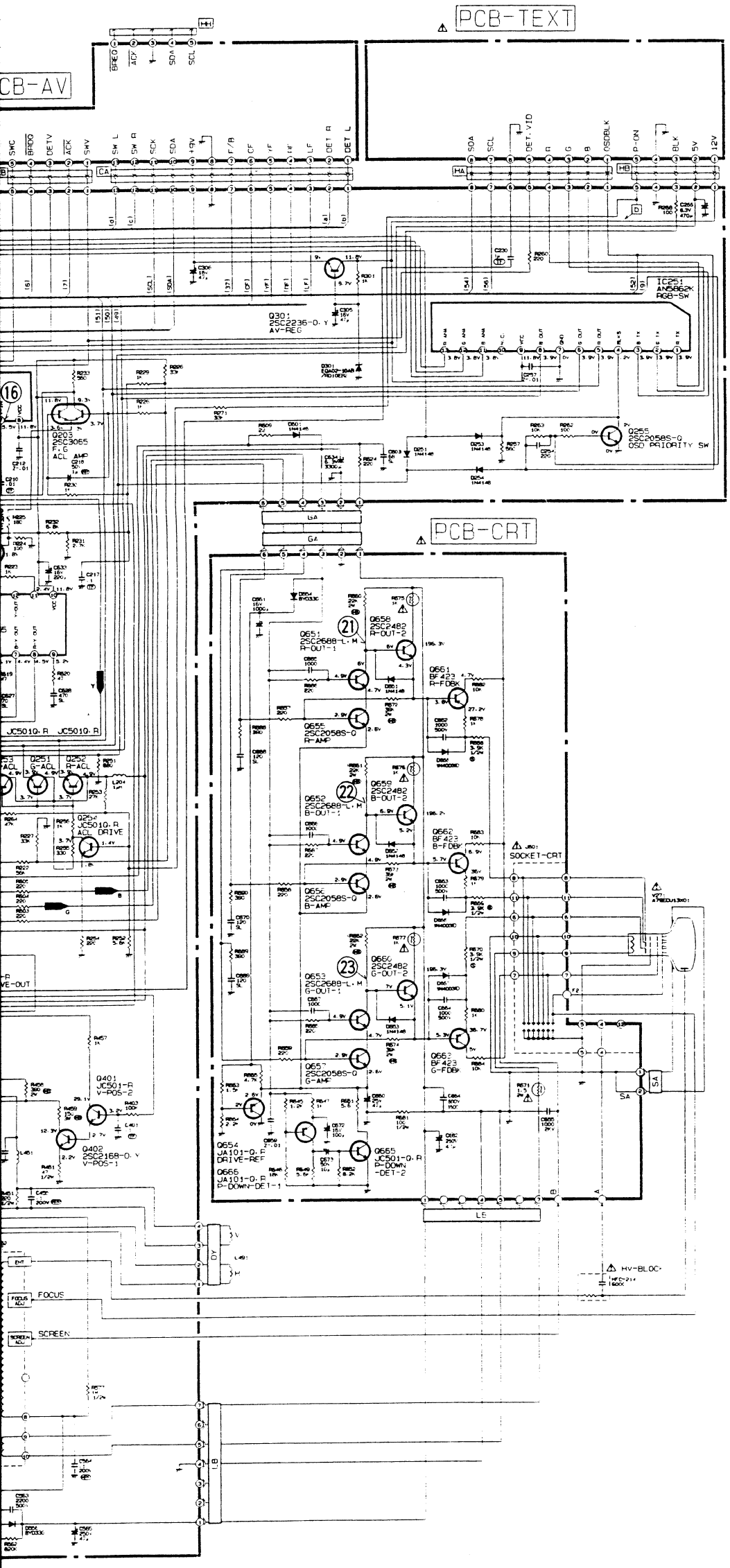
Value	Not indicated	= K = M =
Wattage	Parts except for chips	Not in
	Chips	Not in
Tolerance	Not indicated D =±0.5% F =±1%	
Short	I Parts except for chips	Not in (S) (MB) (CE) (W) (M) (MPC) (ML)
	II Chip	Not

6. This is a basic schematic dia
   modification according to en

SPE

- Zener Diode
- Varicap
- Posistor
- Thermistor
- Fusible Resistor

CHEMATIC DIAGRAM MODEL:CT-33B3EDT



SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

• NOTE

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL colour bar signal
3. TP6A, etc. show Test Points.
4. CAPACITORS

Value	Not indicated	PF, for numbers more than 1 μF, for numbers less than 1
Dielectric Strength	Not indicated :50V	
Tolerance	Not indicated =±10%	No Tolerance is indicated for electrolytic capacitors and ±20%
	G=±2% J=±5% K=±10% M=±20%	P=+100% −0% Z=+80% −20% O=+30% −10% T=+200% −0% C=±0.25PF D=±0.5PF F=±1PF G=±2PF
Sort	I Parts except for chips	Not indicated : Ceramic capacitor (MF) : Polyester capacitor (PP) : Polypropy lene film capacitor (ALM) : Aluminus electrolytic capacitor (TF) : Twin film capacitor (SC) : Semiconductor ceramic capacitor (MP) : Metalized paper (MPP) : Metalized plastic film capacitor (MMF) : Metalized polyester capacitor (MF,PP) : Polyester polypropylence film capacitor (PS) : Styrol capacitor (TAN)or(TANT) : Tantalum capacitor — : Electrolytic capacitor (BP)or(NP) : Non polarized electrolytic capacitor
	II Chips	Not indicated : Ceramic capacitor chip : Electrolytic capacitor (BP)or(NP) : Non polarized electrolytic capacitor chip
Characteristic (only ceramic capacitor)	Not indicated : F or B(high dielectric percentage) CH,SL,etc : Temperature compensating types	

5. Resistors

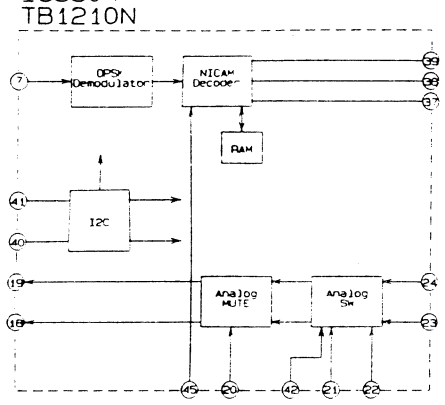
Value	Not indicated = Ω K = kΩ(1000Ω) M = MΩ(1000kΩ)	
Wattage	Parts except for chips	Not indicated = 1/4W or 1/6W
	Chips	Not indicated = 1/10W
Tolerance	Not indicated =±5% D=±0.5% J=±5% F=±1% K=±10%	
Short	I Parts except for chips	Not indicated : Carbon resistor (S) : Fixed composition resistor (MB) : Metal oxide film resistor(type B) (CE) : Cemented resister (W) : Wire wound resister (M) : Metal film resister (MPC) : Metal plate cement resister (ML) : Metal liner resister
	II Chip	Not indicated : Chip resistor

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

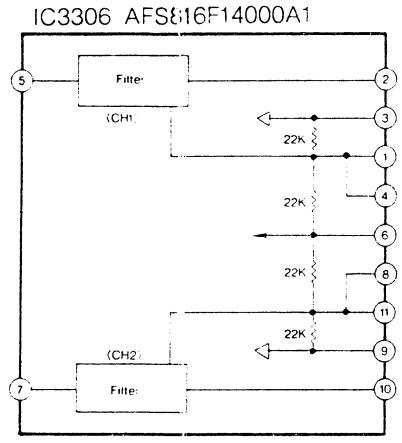
SPECIFIC SYMBOL

Zener Diode	Crystal unit
Varicap	Air Gap
Posistor	Part(resistor) attached on the copper-foil side of PCB
Thermistor	Ceramic filter
Fusible Resistor	

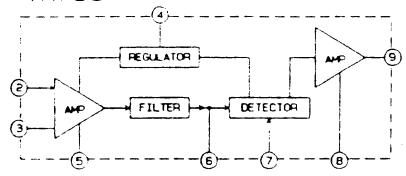
IC3304
TB1210N



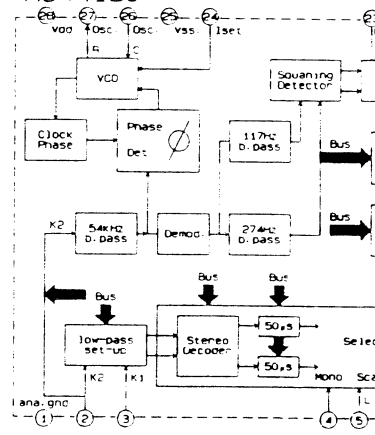
IC3306 AFS8i16F14000A1



IC3400
TA7337P



IC3401
MC44130



IC3402
MC14066BCP
AUDIO SW

IC3401
MC44130
AUDIO
DECODER
CONTROL

Q3402
JC501-Q.R
SW2

Q3401
JC501-Q.R
SW1

IC3304
TB1210N
NICAM
DECODER

Q3302
JC501-R
CA-BUFFER

IC3303
AN608P
AMP

IC3302
AN608P
AMP

Q3303
JC501-P
SIF-BUFFER

5V

R-OUT
L-OUT
R-IN
L-IN
AUDIO SW
LSO
RSO
SCL
SDA
+5V
+12V

PCB-MAIN DD

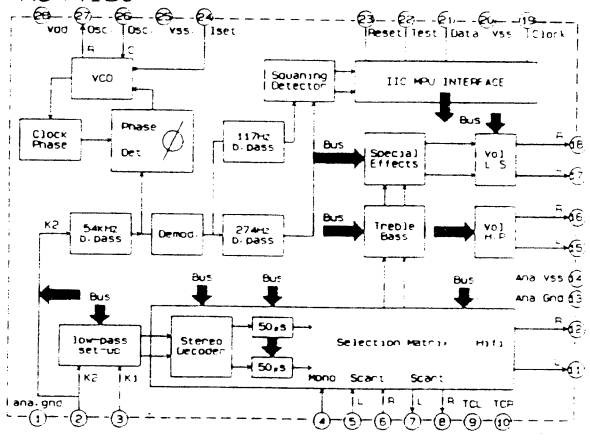
AUDIO-IN
N.C

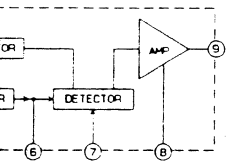
PCB-MAIN DE

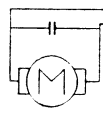
CT-33B3EDT

2

IC3401
MC44130







IC3400
TA7337
FMDEMO

Q3400
JC501-Q.R
SIF-BUFFER

Q3403
JC501-Q.R
NICAM SW

IC3305
TD6710AN
DAC

IC3306
AFS81BF14000A1
LPF

IC3307
M5218AL
NICAM AMP

Q3303
JC501-R
SIF-BUFFER

5V
+12V
AUDIO-IN
N.C
PCB-MAIN DE
PCB-DST

IC801
LB1645N
AT-DRIVE

Q801
2SC1826-Y
AT-REG

PCB-MAIN DA
SOUND-B

IC3S3
TA8200AH-V1
S.W AMP

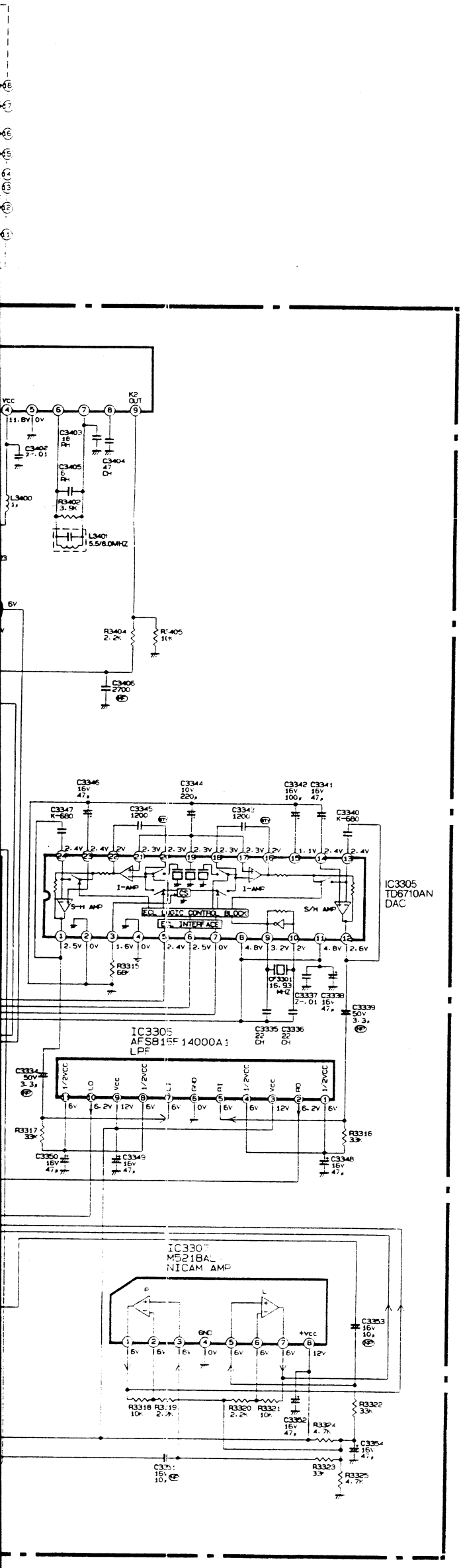
Q3S3
JA101-Q.R
12V-DOWN-DET-1

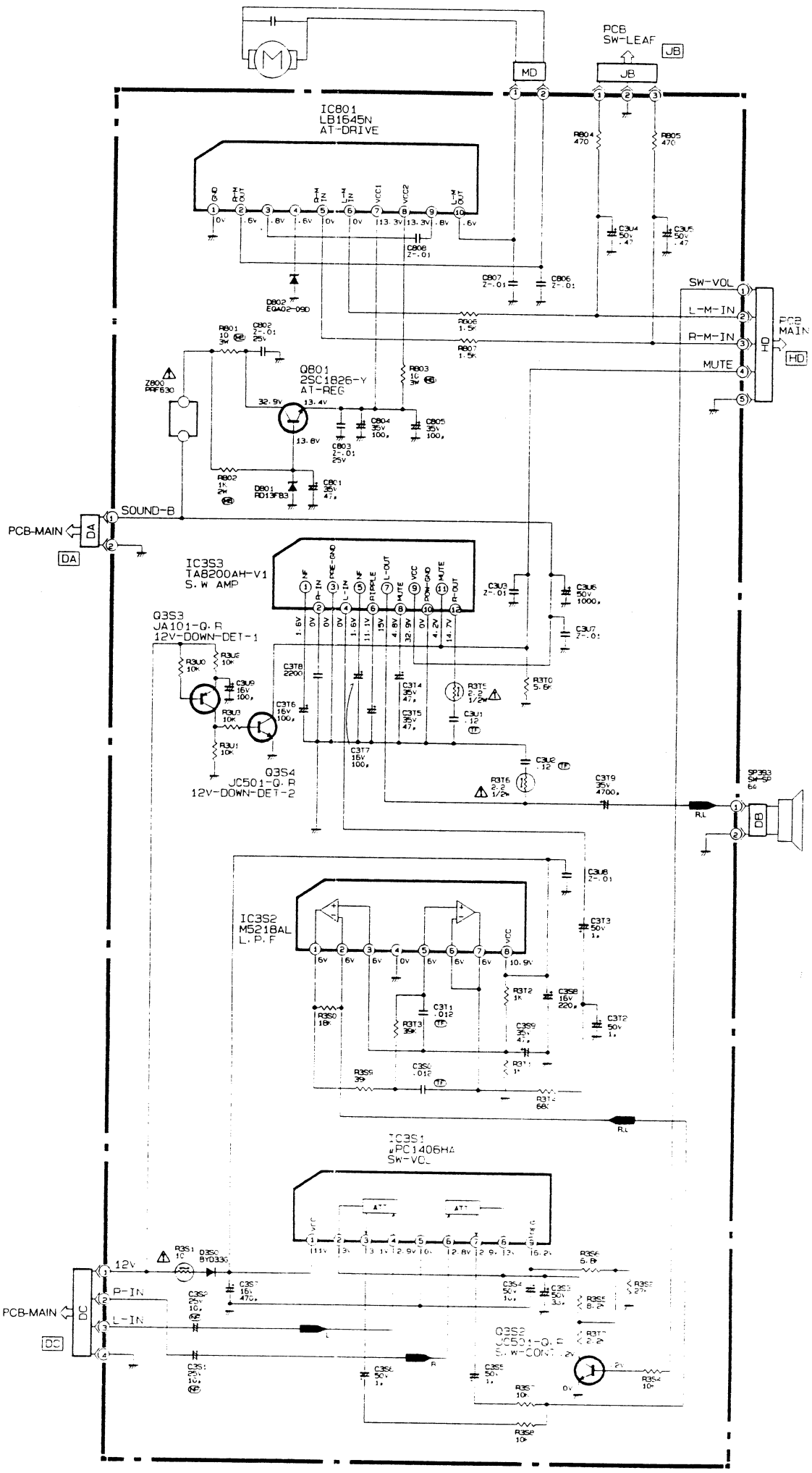
Q3S4
JC501-Q.R
12V-DOWN-DET-2

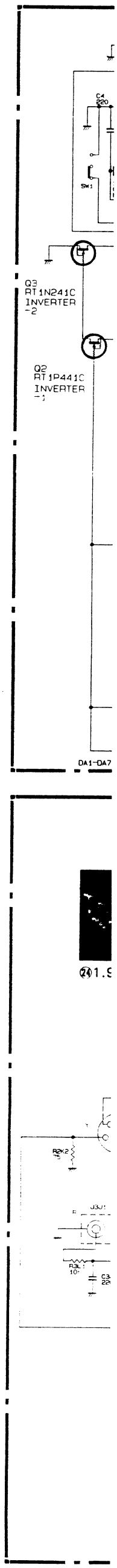
IC3S2
M5218AL
L.P.F

IC3S1
μPC1406H4
SW-VOL

PCB-MAIN DC
12V
P-IN
L-IN


IC3305
TD6710AN
DAC
IC3306
AFS8165F14000A1
LPF
IC3307
M5218AL
NICAM AMP
C3346 16V 47,
C3344 10V 220,
C3342 C3341 16V 100, 47,
C3347 K-680
C3345 1200
C3343 1200
C3340 K-680
1-AMP
S/H AMP
I²C BUS LOGIC CONTROL BLOCK
I²C BUS INTERFACE
CF3301 16.93 MHZ
C3337 Z-.01
C3338 16V 47,
C3339 50V 3.3,
C3335 C3336 22 CH
C3334 50V 3.3,
R3317 33
R3316 33
C3350 16V 47,
C3349 16V 47,
C3348 16V 47,
R3315 68
C3353 16V 10,
R3318 10K
R3319 2.2K
R3320 2.2K
R3321 10K
C3352 16V 47,
R3324 4.7K
R3322 33K
C3354 16V 47,
C3355 16V 10,
R3323 33
R3325 4.7K
⚠ PCB-DST


PCB SW-LEAF
JB
MD
IC801
LB1645N
AT-DRIVE
R804 470
R805 470
C804 35V 100,
C805 35V 100,
C806 Z-.01
C807 Z-.01
C808 Z-.01
C3U4 50V .47
C3U5 50V .47
D802 EQA02-09D
R806 1.5K
R807 1.5K
SW-VOL
L-M-IN
R-M-IN
MUTE
PCB MAIN
HD
R801 10 3W
C802 Z-.01 25V
Z800 PRF630
Q801 2SC1826-Y AT-REG
32.9V
13.4V
13.8V
R803 10 3W
C803 Z-.01 25V
R802 1K 2W
D801 RD13FB3
C801 35V 47,
SOUND-B
PCB-MAIN
DA
IC3S3
TA8200AH-V1
S.W AMP
C3U3 Z-.01
C3U6 50V 1000,
C3U7 Z-.01
Q3S3
JA101-Q.R
12V-DOWN-DET-1
R3U0 10K
R3U6 10K
C3U8 16V 100,
R3U3 10K
R3U1 10K
C3T8 2200
C3T4 35V 47,
C3T5 35V 47,
C3T6 16V 100,
C3T7 16V 100,
R3T0 5.6K
R3T5 2.2 1/2W
C3U1 .12 TF
C3U2 .12 TF
Q3S4
JC501-Q.R
12V-DOWN-DET-2
R3T6 2.2 1/2W
C3T9 35V 4700,
SP353 5W-8Ω 6W
R.L
IC3S2
M5218AL
L.P.F
C3U6 Z-.01
C3T3 50V 1,
R3T2 1K
C3T1 .012 TF
C3T2 50V 1,
C3S8 16V 220,
R3S0 18K
R3T3 39K
C3S9 35V 47,
R3S9 39
C3S0 .012 TF
R3T1 68K
IC3S1
μPC1406HA
SW-VOL
R3S1 10
D350 BYD33G
12V
P-IN
L-IN
PCB-MAIN
DC
C3S7 16V 47,
C3S4 50V 1,
C3S3 50V 3,
R3S5 8.2K
R3S7 2.2K
C3S5 50V 1,
C3S6 50V 1,
R3S6 10K
R3S4 10K
R3S2 10K
Q3S2
JC501-Q.R
SW-CONT
2V
0V
⚠ PCB-S·W·A·T


Q3
RT1N241C
INVERTER
-2
Q2
RT1P441C
INVERTER
-1
SW1
DA1-DA7
R2K2
J3U1

8 9 10 11 12 13

TRANSMITTER-REMOCO

UM4X2

Q1
2SC3246-J, K
LED DRIVER

D1
SE1003-C

IC1
M50461-113FP
MICON

X1
CSB393P812/
KBR393B1L5

SW1

Q3
RT1N241C
INVERTER
-2

Q2
RT1P441C
INVERTER
-1

STORE
SIZE
MENU
CM
AUTO-SEARCH
DG
CH-PRESET
POWER
CH +
CH -
MUTE
OFF-TIMER
STATUS
CANCEL /TIME
MODE

DA1 DA2 DA3 DA4 DA5 DA6 DA7

DA1-DA7: DAN201/DAN215/DAN209S/MC921

PCB
SW-LEAF
JB

MD

IC801
LB1645N
AT-DRIVE

SW-VOL
L-M-IN
R-M-IN
MUTE
PC2
MAIN
HD

Q801
2SC1826-Y
AT-REG

D802
EQA02-09D

D801
RD13FB3

Z801
RBF830

SOUND-B
PCB-MAIN
DA

IC3S3
TA8200AH-V1
S. W AMP

Q3S3
JA101-Q, R
12V-DOWN-DET-1

Q3S4
JC501-Q, R
12V-DOWN-DET-2

SP393
SW-SP
6Ω
RL
DB

IC3S2
M5218AL
L. P. F

IC3S1
μPC1406HA
SW-VOL

12V
P-IN
L-IN
PCB-MAIN
DC

Q3S2
JC501-Q, R
S. W-CONT

IC3305
TD6710AN
DAC

⚠ PCB-S・W △・T

-DST

AV3

⑳1.9Vp-p(H)

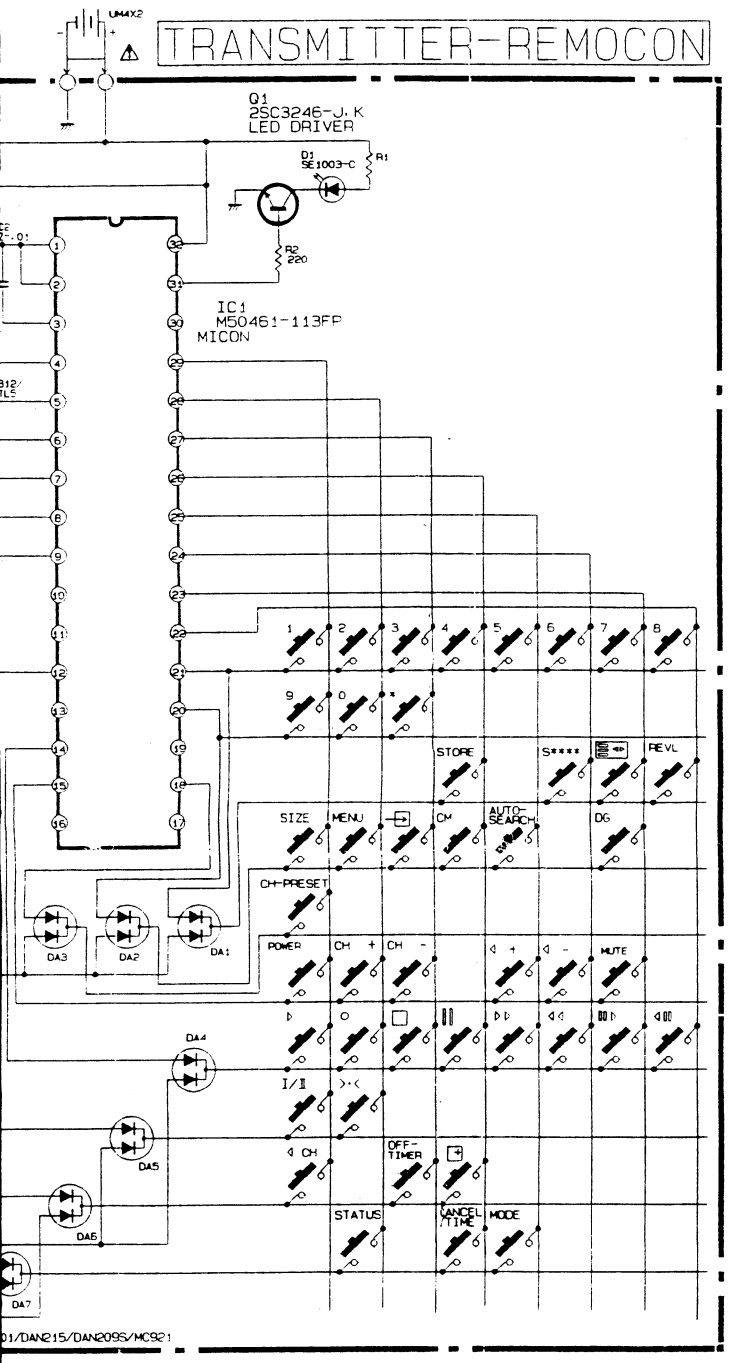
IC3J1
MC14066BCP
AUDIO-SW

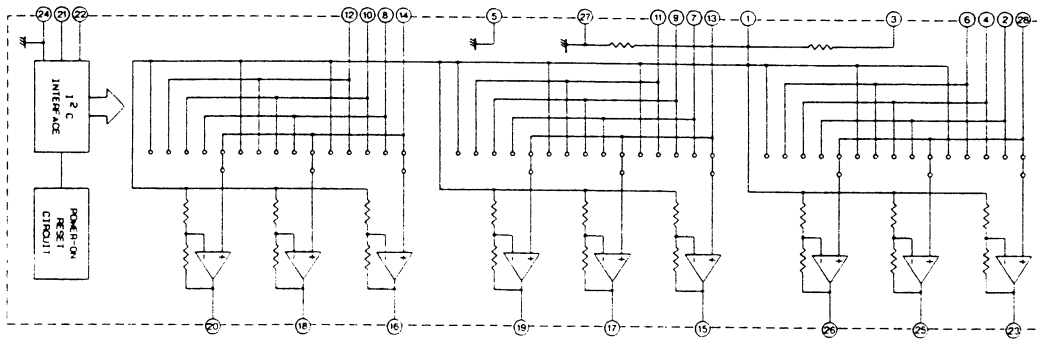
IC2J2
MC14066BCP
Y/C-Sw

Q5J1
JC501-Q, R
S-CHROMA-BUFFER

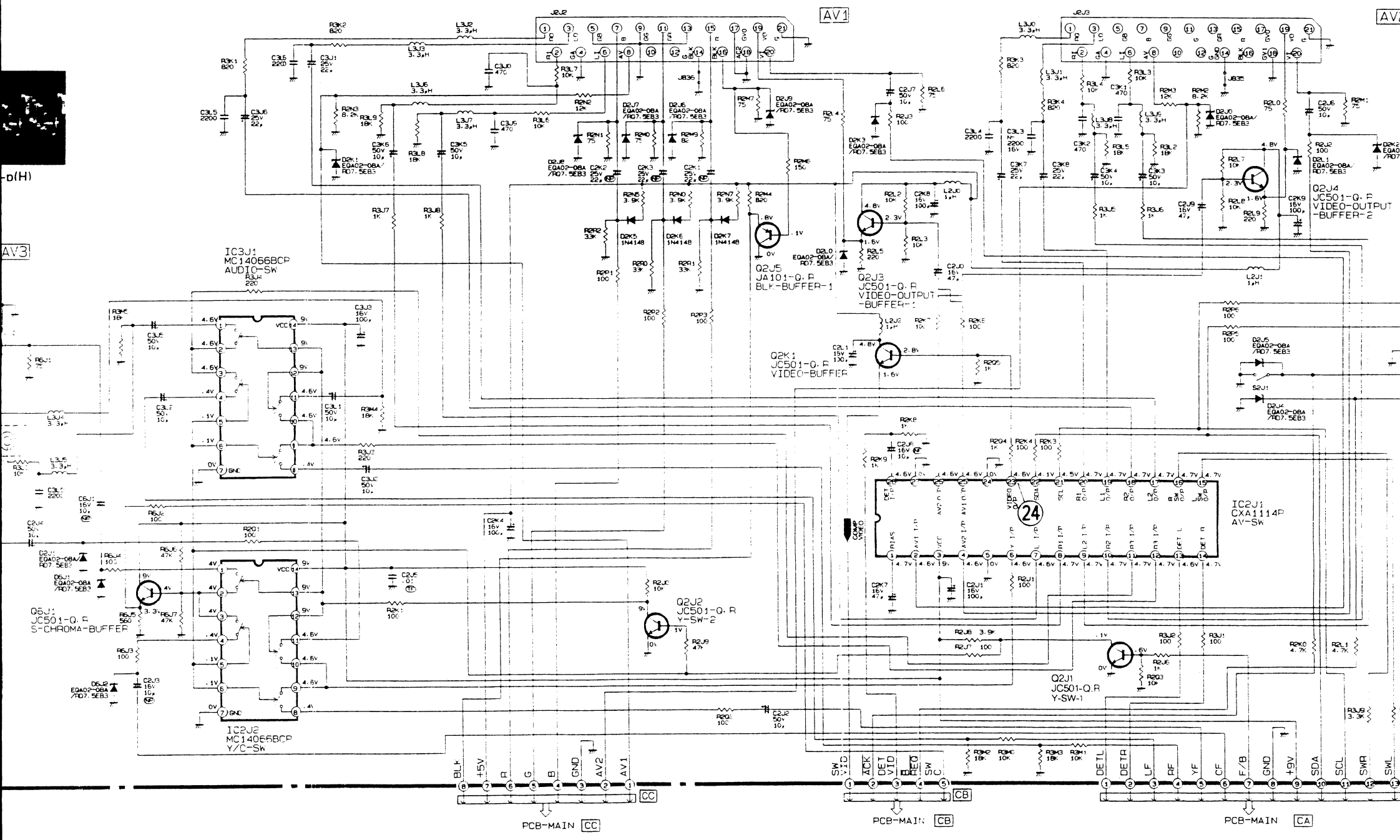
12 13 14 15 16 17

TRANSMITTER-REMOCON



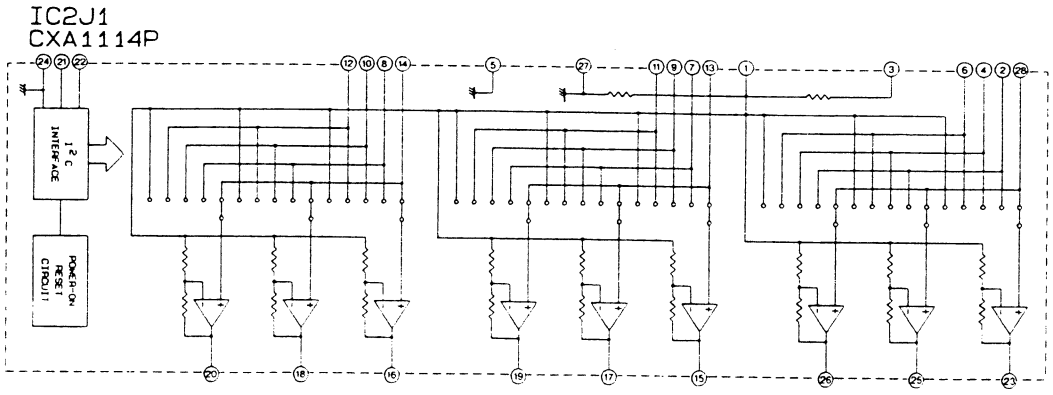


PCB-AV

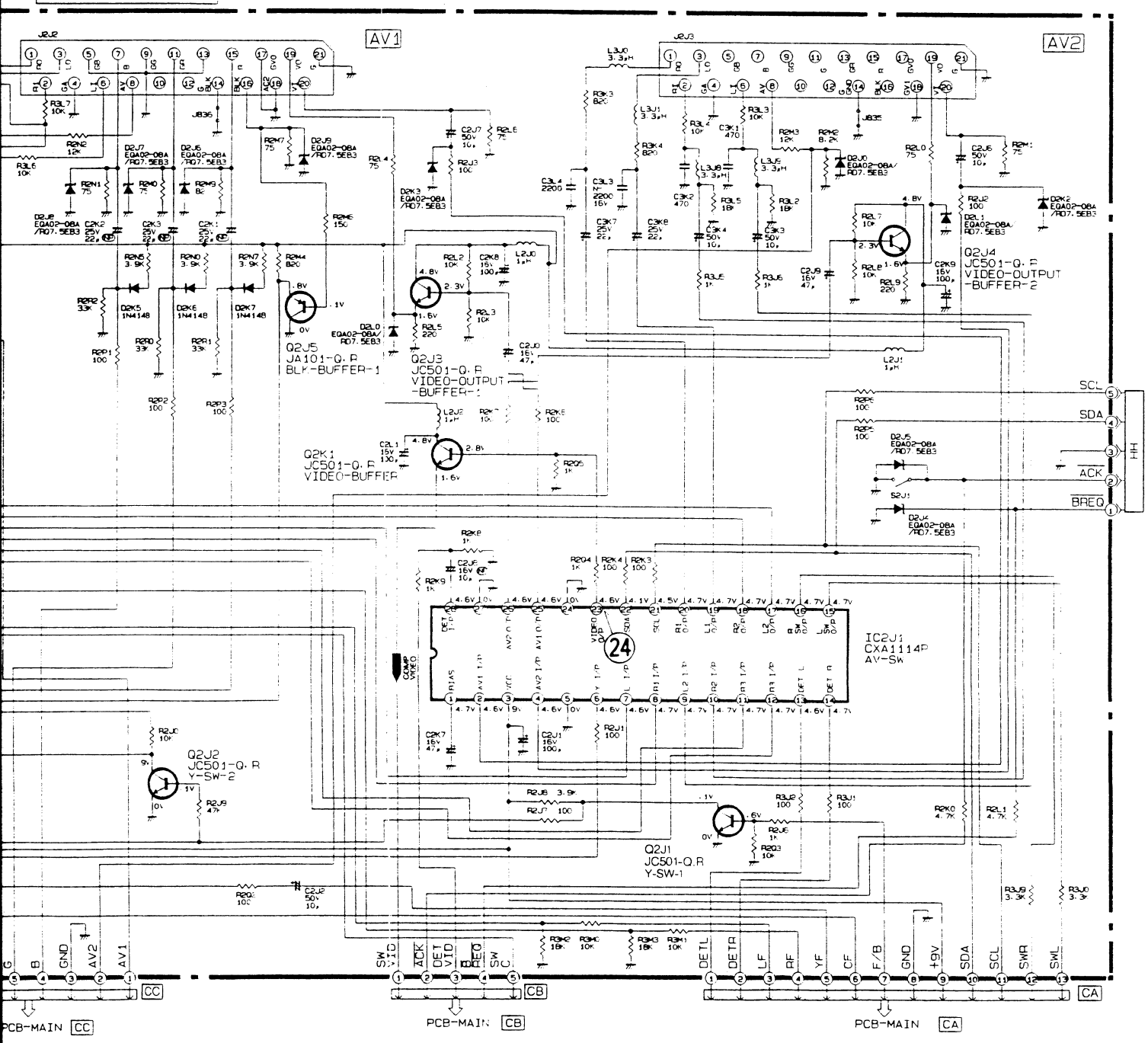


15 16 17 18

IC2J1
CXA1114P

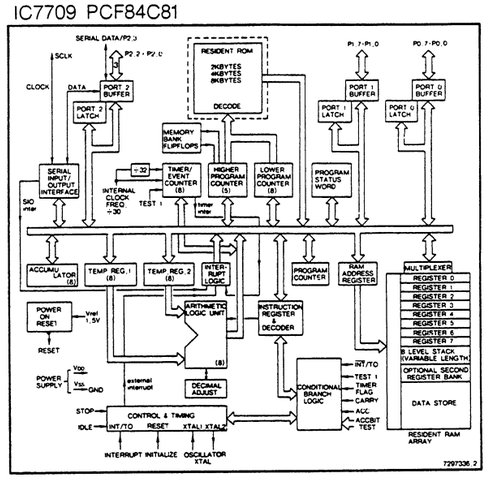


PCB-AV

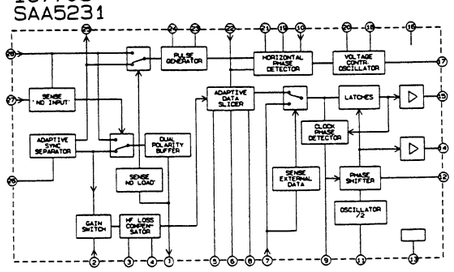


(2)

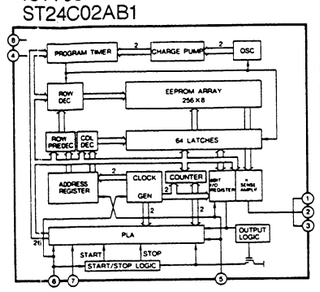
IC7709 PCF84C81

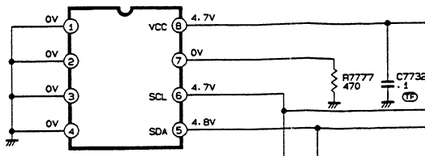


IC7705
SAA5231

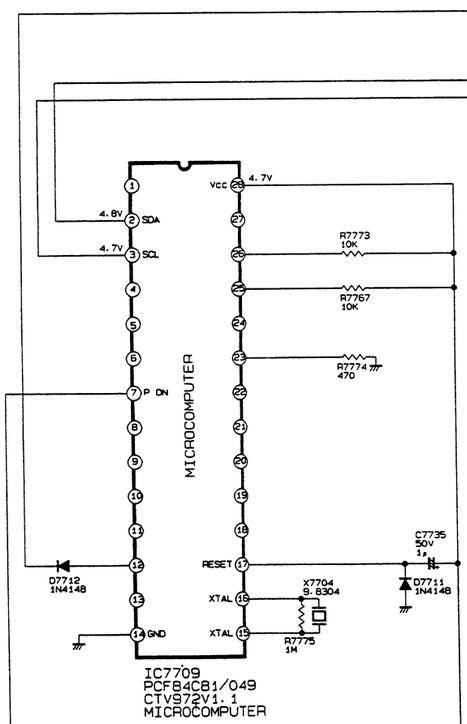


IC7708
ST24C02AB1

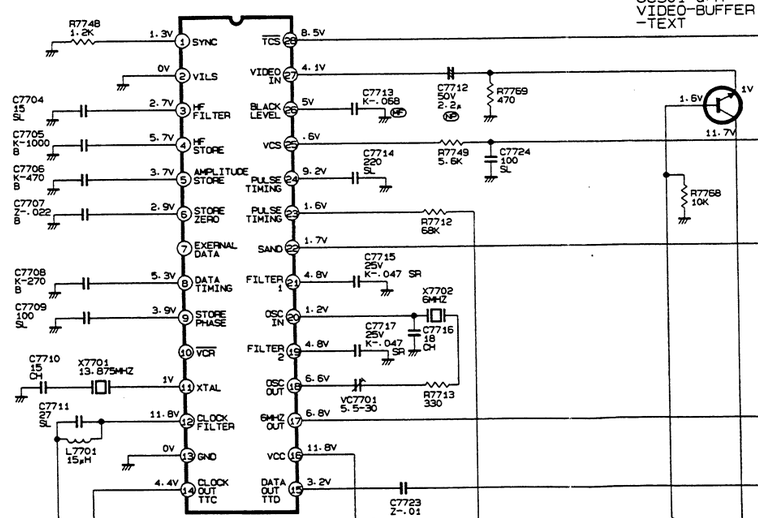




IC7708
ST24C02AB1
NV-RAM



IC7709
PCF84C81/049
CTV972V1.1
MICROCOMPUTER



⚠ PCB-TEXT

5V

C7722 16V 47µ
C7731 .1 (TP)
C7740 .1 (TP)
R7777 470
C7732 .1 (TP)
R7779 33K
R7781 150
R7780 1.5K
C7741 25V 100µ
Q7708 JA101-Q.R ACL-CONT
R7783 470
R7784 470
R7785 470
L7703 10µH
TA4
TA2
TA1
Q7707 JC501-Q.R VIDEO-BUFFER -TEXT
R7769 470
C7724 100 BL
R7768 10K
R7776 2.2K
D7713 1N4148
D7714 1N4148
D7715 1N4148
C7737 16V 47µ
C7738 16V 47µ
C7739 16V 47µ
D7710 1N4148
D7709 1N4148
D7708 1N4148
R7786 39K
R7787 39K
R7788 39K
R7789 220
R7790 220
R7791 220
R7722 5.6K
Q7705 JC501-Q.R BLK-OUT
R7795 330
D7705 1N4148
R7727 82
R7796 820
R7732 2.2K
R7744 220
R7771 4.7K
R7701 220
R7703 220
B
G
R
TEXT VIDEO
R7770 10K
C7736 150 PI
Q7704 2SC2058S-N O.S.D-BLK

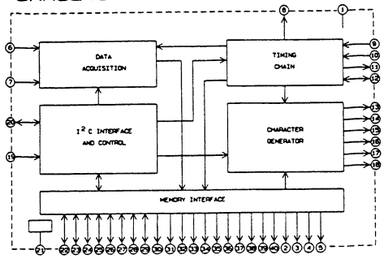
IC7706 SAA 5243 CCT

4.7V	1	VCC	A10	40	0V				
0V	2	A11	A9	39	3.7V				
0V	3	A12	A8	38	3.4V	3.4V	2	A8	
2.4V	4	$\overline{OE}$	A7	37	.1V	.1V	3	A7	
3.8V	5	$\overline{WE}$	A6	36	.2V	.2V	4	A5	
.7V	6	TTD	A5	35	3.8V	3.8V	5	A5	
4.4V	7	TTC	A4	34	1.3V	1.3V	6	A4	
	8	HOK	A3	33	.5V	.5V	7	A3	
6.8V	9	F6	A2	32	2.7V	2.7V	8	A2	
.6V	10	VCS	A1	31	2.7V	2.7V	9	A1	
1.7V	11	SAND	A0	30	2.7V	2.7V	10	A0	
8.5V	12	$\overline{TCS}$	D7	29	0V	0V	11	D7	
.1V	13	R	D6	28	0V	0V	12	D6	
.1V	14	G	D5	27	1.6V	1.6V	13	D5	
.1V	15	B	D4	26	0V				
	16	COR	D3	25	1.9V				
.1V	17	BLAN	D2	24	1.8V				
	18	Y	D1	23	2V				
4.8V	19	SCL	D0	22	.2V				
4.8V	20	SDA	GND	21	0V				

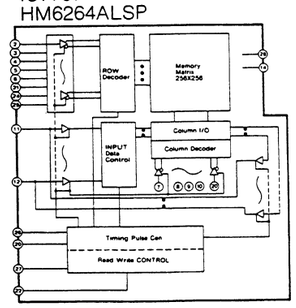
IC7707 HM6264ALSP10 /HM6264ALSP12 8KB STATIC-RAM

						1	NC	VCC	28 4.7V
						2	A8	$\overline{WE}$	27 3.8V
						3	A7	VCC	26 4.7V
						4	A5	A11	25 0V
						5	A5	A12	24 0V
						6	A4	A10	23 0V
						7	A3	$\overline{OE}$	22 2.4V
						8	A2	A9	21 3.7V
						9	A1	CS	20 0V
						10	A0	D4	19 0V
						11	D7	D0	18 .2V
						12	D6	D3	17 1.9V
						13	D5	D2	16 1.8V
						14	GND	D1	15 2V

IC7706 SAA5243



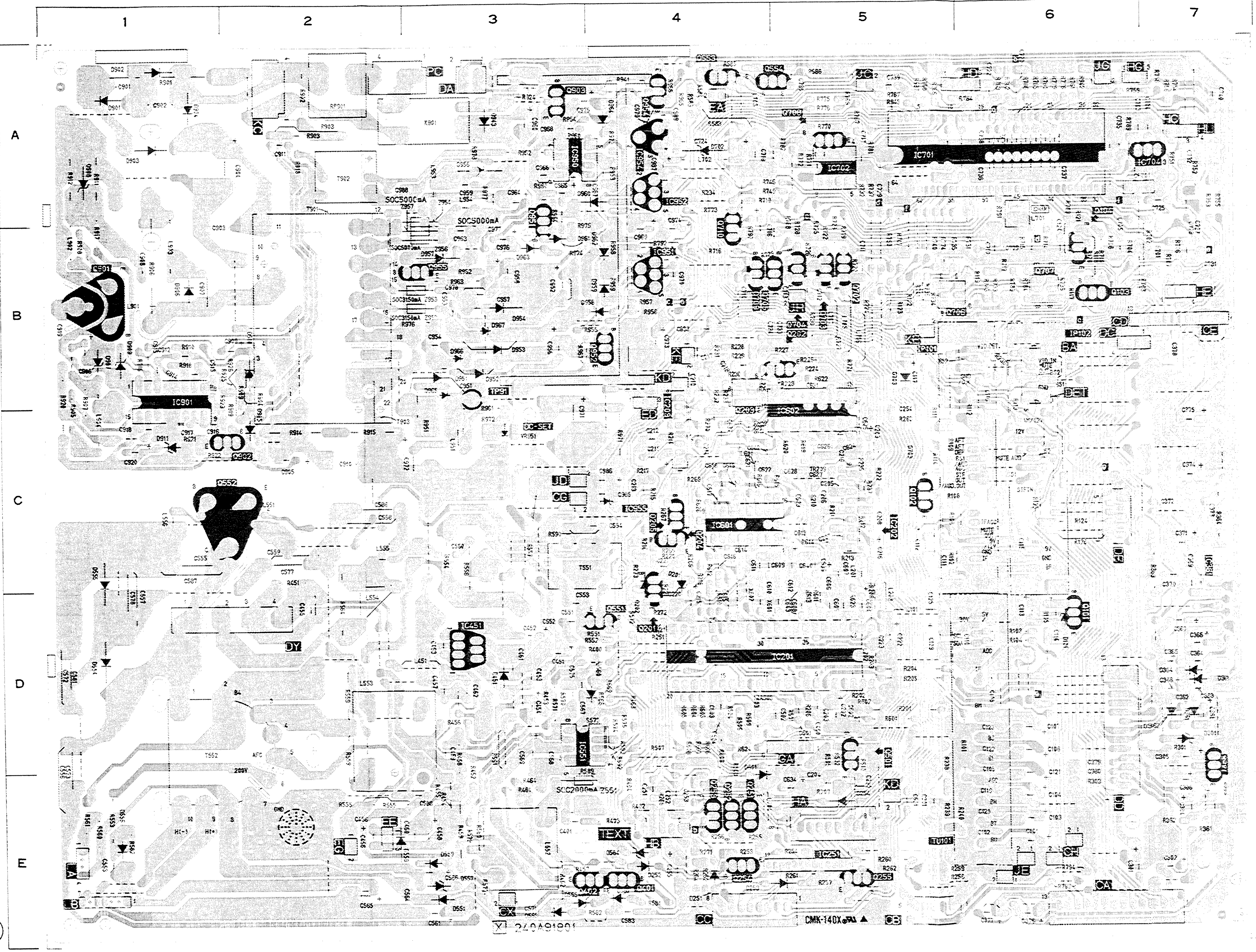
IC7707 HM6264ALSP



P-ON
BLK
5V
12V
PCB-MAIN HB

SCA
SCL
DET.VID
R
G
B
OSD-BLK
PCB-MAIN HA

PCB-MAIN



1
2
3
4
5
6
7
A
B
C
D
E
IC901
IC950
IC952
IC951
IC701
IC702
IC704
IC602
IC681
IC451
IC551
IC201
IC251
IC955
Q901
Q902
Q552
Q903
Q955
Q954
Q553
Q201
Q255
Q703
Q710
PC
DA
KC
KE
KD
JD
CG
DY
EE
CX
CC
CB
CA
JE
BA
JC
HG
GA
DET
EXT
TP91
DC-SET
TU101
SOC5000mA
SOC3150mA
SOC2000mA
X901
T901
T902
T551
T552
200V
GND
AFC
VR551
CMK-140X
240A91801

PCB-MBC

1 2 3 4 5

A

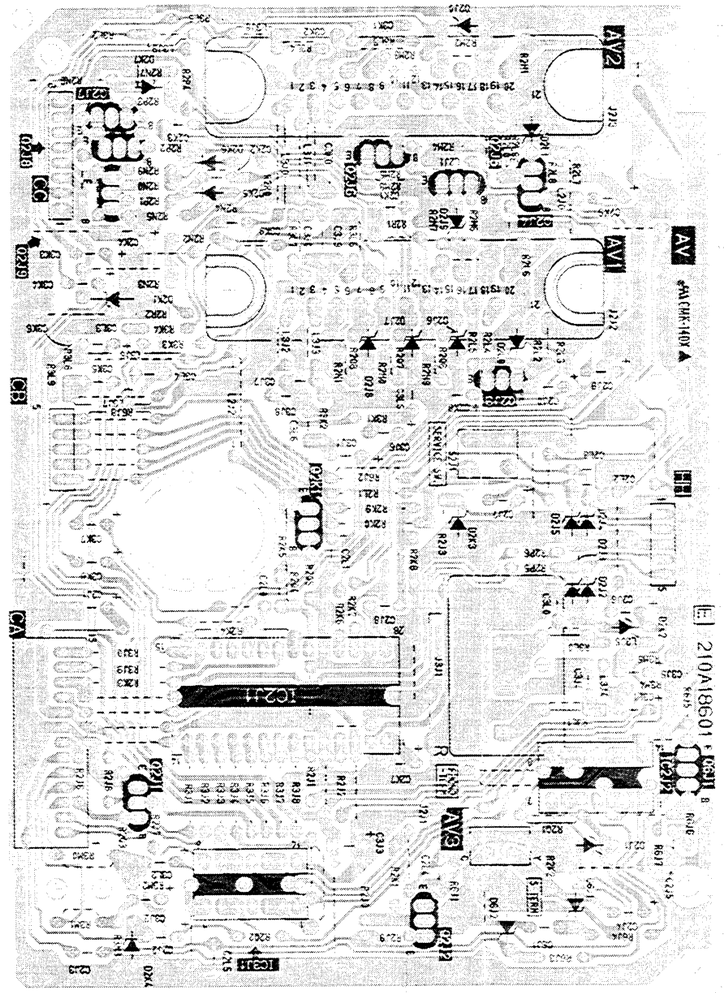
B

C

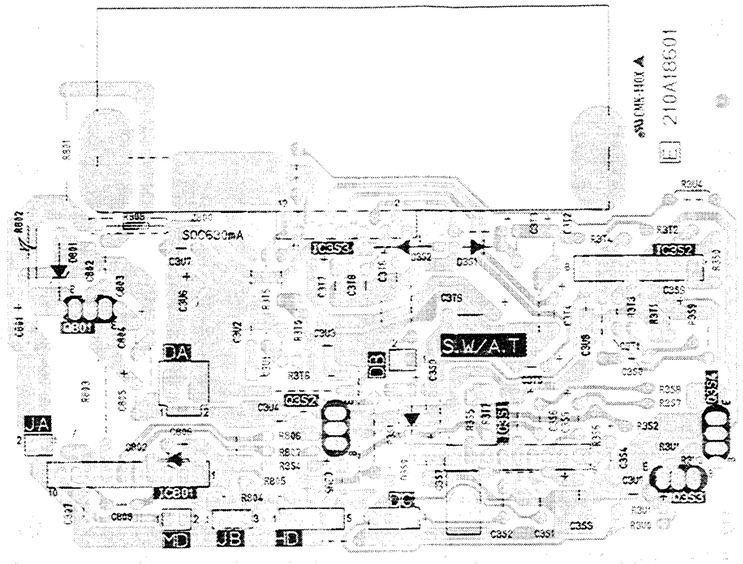
D

E

PCB-AV

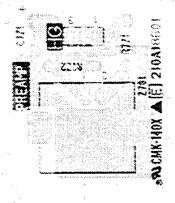


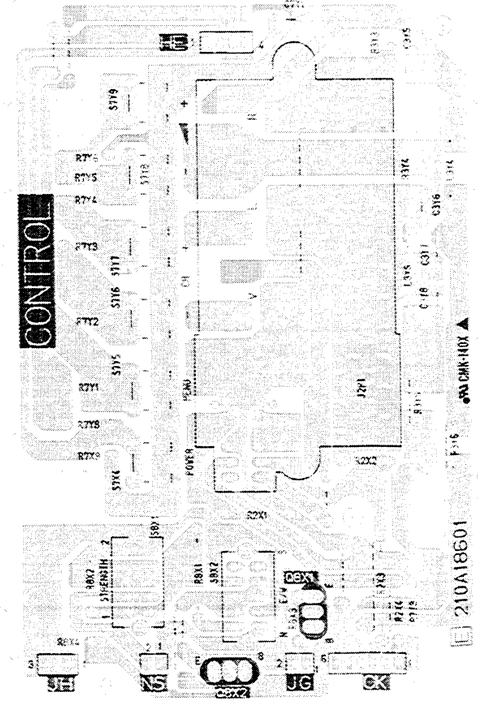
PCB-S.W/A.T



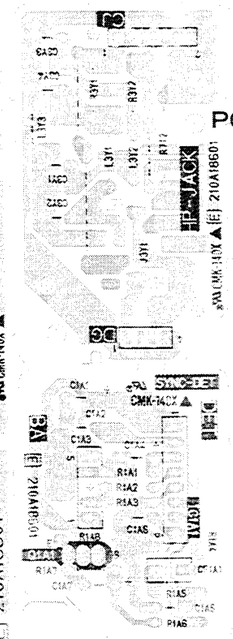
PCB-LED

PCB-PREAMP



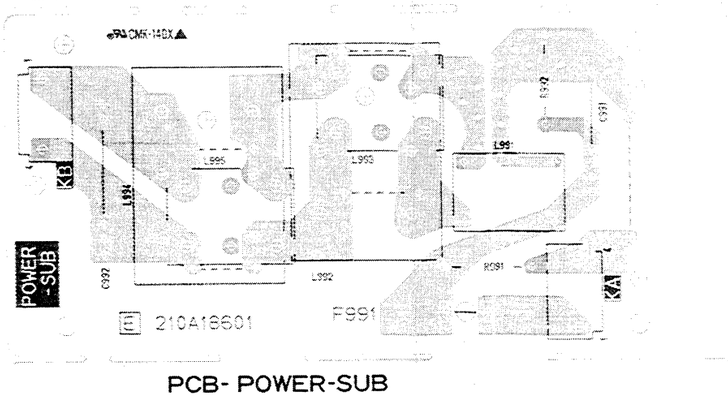


PCB- CONTROL



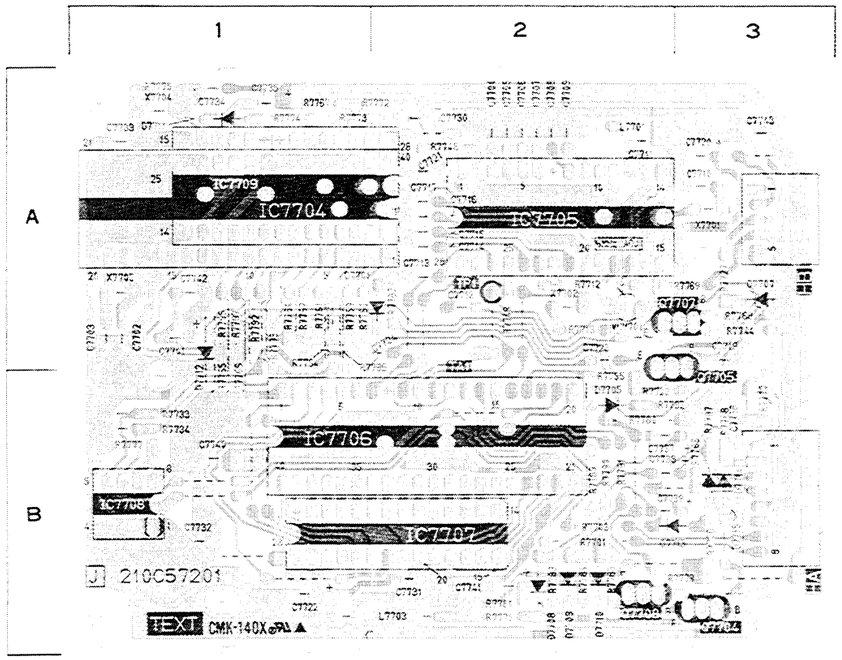
PCB-HP-JACK

PCB-SYNC-DET

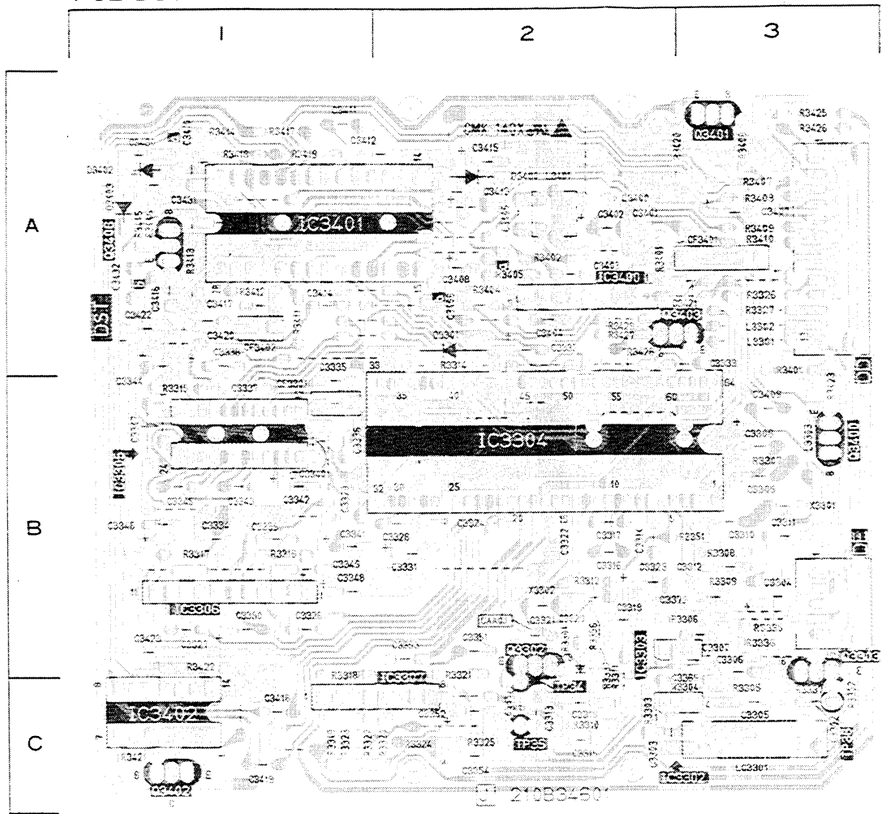
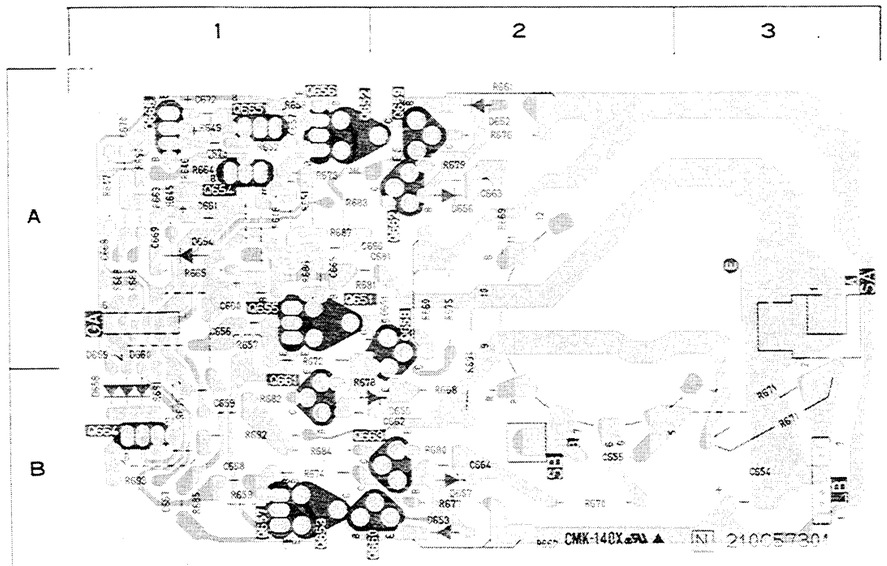


PCB- POWER-SUB

PCB-TEXT



PCB-DST



PCB-CRT